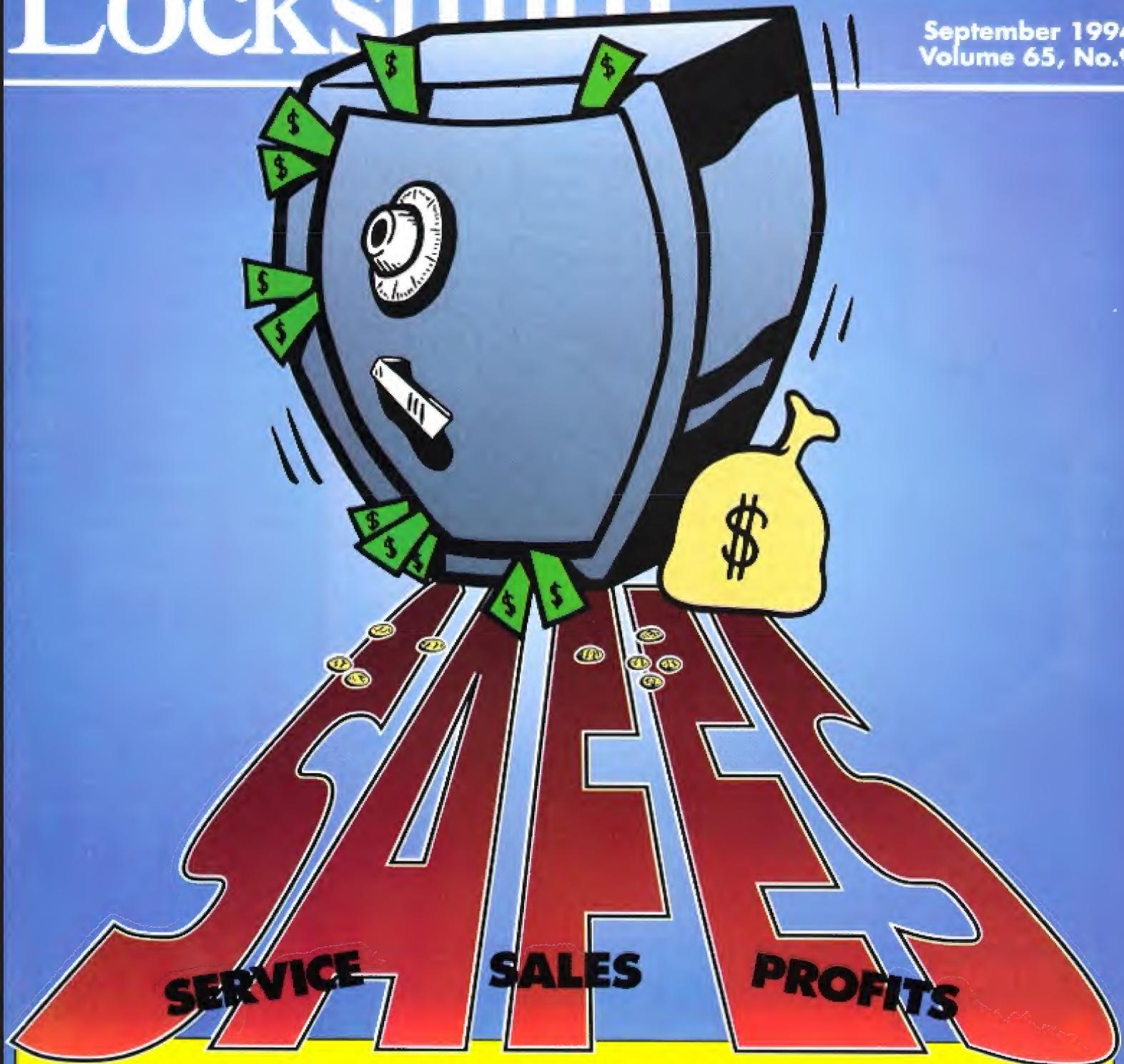


The National Locksmith

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September 1994
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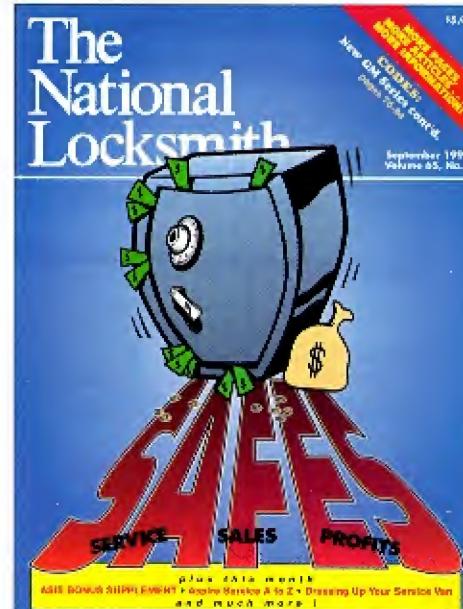
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On The Cover

Safes are bursting with profits for the locksmiths who know how to use them. You...

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COMMENTARY

Introducing the National Locksmith Automobile Association...NLAA!

I have some exciting news for you! *The National Locksmith* is announcing a new division of our publication to be called the National Locksmith Automobile Association™. The NLAA offers you a host of benefits for your membership.

One of the biggest problems a professional locksmith faces when called to an auto job is the enormous range of information he or she needs. Code locations, service procedures, linkage type, opening methods, codes series, depths and spaces . . . the list seems almost endless.

Now, however, as a member of the NLAA, you will have this information at your fingertips. Each member will receive a framable Membership Certificate, a Photo I.D. Card, as well as a special \$10,000.00 auto work Bond. In addition, you will receive our new quarterly newsletter, packed with the latest tips and techniques for opening the latest cars as well as service procedures.

Plus, you will receive regular technical bulletins communicating to you the very latest changes and details on hot new cars, key blanks and tools. You will also receive a discount coupon good for up to \$150.00 off on code books. As if that weren't enough, you will have access to our Code and Car Hotline. This Hotline gives you instant access to codes, spaces and depths and tips, even when the codes are so new they are not yet published.

To really make your membership in the NLAA a tremendous advantage, the first 500 members to enroll will receive Charter Membership. This means you will receive the lowest membership number, a Charter Membership Certificate and Photo I.D. Card. PLUS, we have reserved an extra special free gift for our Charter Members. For more information, please see page 68.



Marc Goldberg
Editor/Publisher

target was Chicago area locksmiths as CBS affiliate, Channel 2, called locksmiths out to open properties they did not own.

Of course, we have written this type of story before. The locksmith sting operation is old news. When these stings appear on television, they really do a disservice to the entire profession of locksmithing.

Today, we are facing some bright possibilities as you know. The Security Professional Council (SPC) is working to get a great deal of publicity for the locksmith profession. This is a combined effort between the National Locksmith Suppliers Association (NLSA), ALOA, and a number of manufacturers.

Let's be prepared to instill confidence in the public with our knowledge, our business practices and, yes, even our appearance. Today's customer has become very sophisticated. Even the old hardware store has been replaced with carefully designed marketing strategies. I guess we just have to think about jumping on the bandwagon. But you know what? I think it will be a good ride! What do you think? Drop me a line and give me your opinion.

You may recall that I recently warned you about a mail order company called Standard Tool Co. in Florida, soliciting locksmiths to buy expensive G.M. tryout key sets. I have heard from a number of readers who feel they were ripped off by this company. Now we have reports of another outfit (maybe even related to Standard) called American Tool Co., also in Florida.

American Tool Co. is offering a Ford 10-cut tryout key set of 135 keys for \$250. Like Standard, they insist on either prepayment, cashiers check or cash. Remember, if you pay for a product in this manner, it is almost impossible for you to get a refund. Deal with reputable companies and beware of American and Standard Tool Companies.

Marc Goldberg

They're at it again! Once again, the creative geniuses who produce television news have aired a locksmith sting operation. This time, the

LETTERS

Comments, Suggestions and Criticisms

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

Locksmith Suggests DHI For Additional Education

Dear Marc:

My new business card, which may be the first and only of its kind, now includes door swings, hardware finishes, and most importantly the new initials AHC (Architectural Hardware Consultant) after my name.

Like many of us, I grew tired of hearing "come and make it work" from a contractor after they had rejected our bid and had installed the hardware themselves. If only someone had taken the time to coordinate the doors and hardware in advance. This led me to the Door and Hardware Institute (DHI) and I joined their AHC apprenticeship program in 1988.

Life Safety Codes, fire doors, exit devices, building codes, the ADA, specification writing, hardware schedules, electronics, take-offs, door handles, fasteners, rabbits, finishes, hinges, locksets, hollow metal doors and frames, kickplates, and wood doors are a few of the things that must be mastered to pass the two day AHC exam.

The AHC instructors are a friendly, all-volunteer bunch, who are very willing to go out of their way to teach and educate the apprentices. Hopefully I won't be the last locksmith to join DHI, take their educational classes and earn an AHC. After all it is a closely related field.

Ed C. Harris, AHC/CML
Virginia

Reader Wishes To Regulate Use of the Term Locksmith

Dear Marc:

We seem to be too generous. The way we banty about the title Locksmith, we have no reverence for the term, nor does anyone else. There is no reason to revere or have pride in the occupation we have chosen. We give the most novice of people the right to use the term equally with those of us who have spent years trying to prove worthy of the title. Personally, I get weary of seeing poorly trained people who are doing nothing to further their skills, yet occupy equal status. The industry is much too generous with these people.

Sometimes I think the untrained locksmith, himself, is unaware of what his chosen field entails and I would hold the association liable if it weren't for meetings, a good publication, and a good ongoing education program. These things have little value, unless locksmiths voluntarily partake.

Recently, I have heard major league sports lamenting reduced attendance and saying that this results in a lack of incentive for the players. (We won't discuss the fact that it costs the average family of four two-hundred dollars to attend.) I can, however, relate to the lack of attendance at membership meetings and education classes. Those who want to give back to the association are reluctant to do so because there is so little return for their effort. It takes involvement by the majority of the membership to make any of its programs work. There are always those who are willing to shoulder the burden of preparation and planning. The only price is encouragement.

To survive, the locksmith industry must set some requirements and standards. First, no one should be allowed to use the name locksmith unless they belong to a recognized association. The associations could

then become the responsible agent for seeing that the locksmith meets minimal requirements and standards. Those independents who choose not to belong to an association should use the title Lock & Key. In other words, they could operate as A-Z Lock & Key, but not A-Z Locksmiths.

Before you say it, I agree this is an exercise in semantics, but I say also, this should be a temporary situation. The industry (and this includes all factions) would then be responsible for teaching the public the difference.

R.W. Staples, CML
Washington

Aero Lock Recommends Tryout Key Procedures

Dear Marc,

I was extremely pleased and gratified at the excellent write-up of my product by Eugene Gentry in his column "Beginner's Corner." His description of how tryout keys are made, and how they work, was extremely accurate. He was also correct in stating that tryouts can be a real time saver, since you spend less time picking impressioning or disassembling a lock.

In the June 1994 article, Mr. Gentry described two methods of how to make a key for the customer. One of these methods is to duplicate the tryout key for the customer. If you simply duplicate the tryout key it may bind in the lock, simply because of the tolerances explained in Mr. Gentry's article. Tolerances in automotive or motorcycle locks are extremely broad, however, there are limits.

Once an accurately cut tryout key is produced, there are few limits to work with. Even if your duplication machine is cutting with high accuracy, you could be off by approximately .001". Considering the tolerances that the tryout key is playing with in the lock, this could verge on the limits of the lock's tolerance, and cause the key to bind.

The instructions that one receives from Aero Lock, however, describe an alternative and effective method which Mr. Gentry mentions briefly in his article. By using this method your customer will not only have a working key, but it will be cut to proper specifications, and you won't have to worry about a call back about a key stuck in the lock.

In addition to this key not getting stuck in the lock, there is another reason to not simply duplicate a tryout key for a customer - LIABILITY.

As a tryout key there are several possible codes that this one key may operate. The tryout key is designed to work many different codes, but the customer's key should only be able to operate his own code.

Making keys for a customer from a tryout key is extremely safe, and there is no possibility of interchange between codes if the manufacturer's instructions are followed. We recommend that Aero's method for making the customer's key from a tryout be used exclusively for the above mentioned reasons.

David Parrott
Aero Lock - Tennessee

ISM Laments Exclusion From McOmie Safe Book

Dear Marc:

In your July 1994 issue of *The National Locksmith* magazine on page 129 appears an advertisement for a guide to "High Security Safes." Many safe manufacturers are listed, including some that have not manufactured for many years. Interestingly, ISM (Israel Safe Manufacturing) is not mentioned.

The cover of the guide refers to "...the meanest, toughest, most secure safes manufactured anywhere in the world." ISM holds the highest UL rating in the USA, without any competitors. ISM also holds the highest rating by the Dutch Safe Rating Committee.

It is interesting to note that the only safe manufacturer in the world, both in the USA and Europe, with the highest standards rating is absent from your advertisement.

ISM is the most popular safe in the Jewelry industry, and the standard by which all other safes are measured. I would seriously question the information available in the guide.

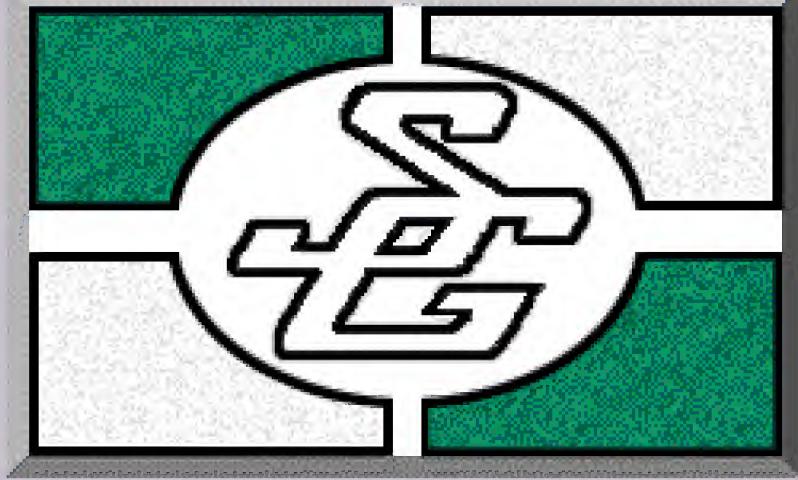
based on the references used in the advertisement.

If you would like additional information on ISM, Please contact me.

Dorron Brouard
ISM Marketing Manager
New Jersey

Editors Note:
Dear Mr. Brouard:

We apologize for not including ISM high-security safes in Volume Two. You are quite correct — ISM makes some excellent safes, and no treatise on high-security safes would be complete without a section on ISM. There are two reasons you won't find ISM high-security safes in Volume Two. First of all, a few of ISM's most popular safes were in Volume One, and secondly, we are preparing a special volume dedicated only to ISM high-security safes, scheduled to be published in late 1995 or early 1996. We apologize for the delay and hope you will consider the reward worth the wait.



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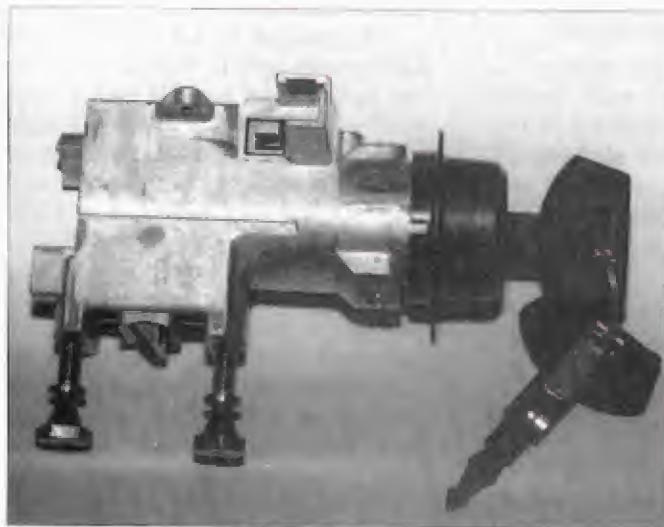
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by
Dale Libby

IN SEARCH OF "ALPHA-WRECKERS"

Following is a series of tools for generating a key for the GM Alpha Tech ignition.



1. The Alpha-Tech ignition with two keys.

I was asked to do a general review of the tools that are used to generate a first key for late model GM cars that use the double sided Alpha Tech double sided lock. At first I was going to rate them by myself in the order that I like the tools. Although accurate, I decided to ask several other locksmiths what their preference was before writing this article. I interviewed several locksmiths that work on many, many cars every day. One works at "The Auto Auction" making as many as ten or more Alpha Tech ignition keys in one afternoon.

Before you ask what business I have in reviewing auto tools, let me assure you that I am a fully qualified auto specialist as well as a safe cracker. This includes working on high security vehicles such as the Mercedes 2- and 4-track. So, while I enjoy doing safes, I am equally competent at doing autos. Now, back to the Alpha Tech.

An Alpha Tech ignition is shown in photograph one. They are supplied with two keys and a key tag with the code on it. Just for information, this lock was purchased from a locksmith

supplier for about \$140. Later I found out that a Chevy dealer was selling the same lock and keys for about \$75. Shop around before you purchase one of these units.

Photograph two shows the lock with the CF206 Code Card. The GM rules apply when working on these keys: e.g. the bitting must add up to an even number, a MACS of two, no more than three adjacent cuts of the same depth, no more than four cuts of the same depth; just like the single sided GM keys.



2. The CF206 Code Card used to code cut the key.



3. Baxter try out keys with key gauge cut.



4. AlphaCracker depth finding keys.



Before discussing the tools and methods for making a key for this ignition, some of its peculiarities should be pointed out. The Alpha Tech ignition is a six space/five depth lock. The unit uses both wafer tumblers and a sidebar. The even spaces, 2, 4 and 6, come down from the top of the cylinder. The odd spaces, 1, 3 and 5, come up from the bottom.

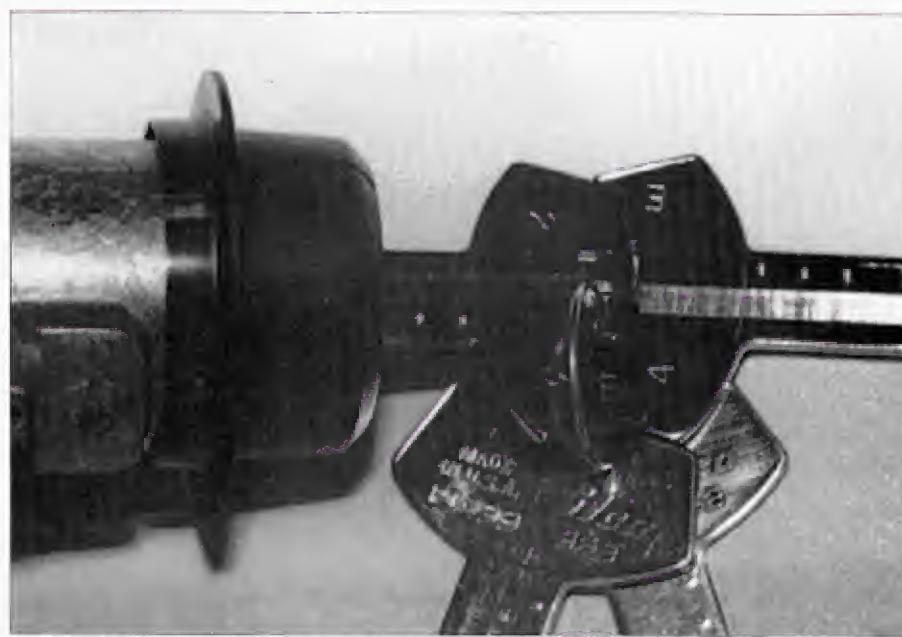
One of the biggest problems with reading or using a depth finding tool on this unit is the way in which the tumblers are sized. In most wafer tumbler locks, the size of the land side of the tumbler is proportionate to the depth of the cut on the key. If the cuts on the key have a drop of .024", the corresponding tumblers also have a .024" difference.

In the Alpha Tech, however, while the key has a .024" drop from depth to depth, the tumblers for the 2 and 3 depth do not have the corresponding difference. In fact, when sitting in the lock, there is only a .008" difference. This small difference makes it virtually impossible to make an accurate depth finding tool for these two depths. In fact, the two depth finding tools covered in this article treat the 2 and the 3 depth as one cut, and include various methods for determining the difference between the two.

Finally, this ignition is very inconsistent in tolerances from lock to lock. As a result, many auto dealers have stopped cutting keys for vehicles with this ignition, often turning it over to a locksmith. While punch machines can be used with some success, I prefer to use either the Framon or HPC 1200 code machines to cut keys. In either case, cut or file away the high points of each cut to achieve a laser cut type of key. This allows more flat for the tumbler to sit on.

In evaluating the tools I divided them into two groups, skilled and unskilled. First, the unskilled. These include try-out keys. The two brands that I have used are the Aero and Baxter Systems sets. They work basically the same.

Photograph three shows the 76A set notch key of the 112 key set by Baxter Systems. Basically, use the



5. The Alpha-Cracker keys and slide at work.

notched key to determine which side of the lock is indicating. Insert each key on both sides until one turns the lock cylinder a little. This is your basic pattern. Look up the key in the cutting guide and clip, cut, or with depth keys make the starting cuts. Refer to the charts in the book to see the maximum cuts.

Now, to finish the key, you just impression the last cuts. Full instructions are included.

An alternate method is to find a key that works somewhat well, and then duplicate the key on another blank, both sides. Then using a lineman's pliers, fit the lock to the key. Sounds brutal, but it works due to the large tolerances in this lock. These locks can be frustrating.

The following three methods are part of the skilled group. By skilled I mean that there is no trial and error to making a key. Whether it's using

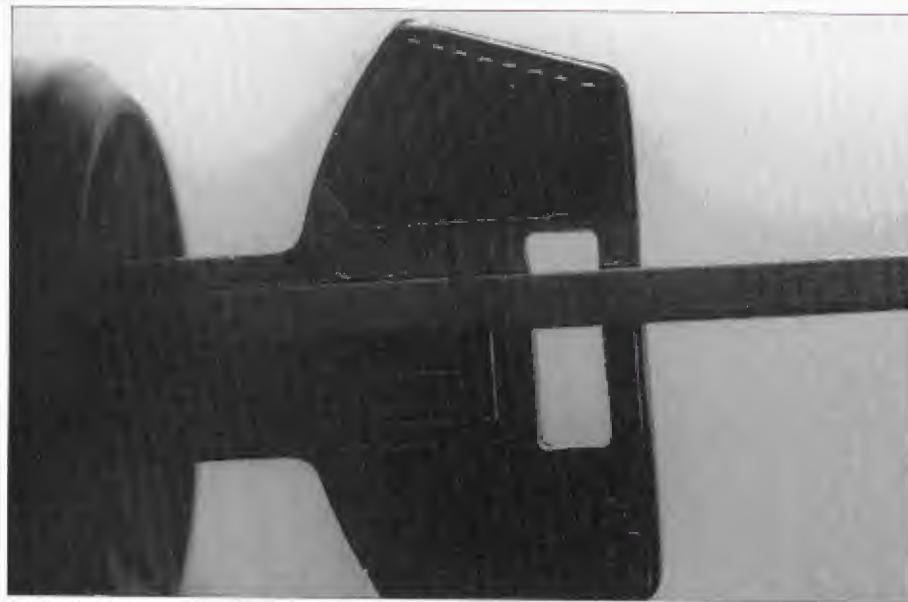
a reading tool, progression or impressioning, skilled methods demand a knowledge and expertise in locksmithing techniques.

The first skilled method is the depth finding keys from Saber Tool, the AlphaCracker. Photographs four and five show the AlphaCracker keys

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6. H.E. Mitchell's Alpha-Tech Tool slide and depth gauge front reading



7. Mirror installed so the back of the key can be read.

and the wafer slide. There are four keys to cover the five depths used in this code series.

These keys slide into the lock and the depth of each wafer is determined in the traditional pass/no-pass method. In other words, the

shallowest depth to pass under a tumbler is the correct depth.

For instance, if space one is a 4 depth, the keys for depths 1, 2 and 3 will not pass the tumbler. Because the 4 key is the correct depth it is the first, and shallowest, key to pass under the tumbler. The five key will also pass under the tumbler, but it is not the shallowest key to do so. *REMEMBER*, the shallowest key to pass under the tumbler is the correct depth.

Mentioned earlier is the 2 and 3 depth problem. To deal with this problem, the AlphaCracker uses one key, the 2/3, to read this tumbler. The true depth can then be found by following the GM rules, impressioning, or progressioning. It should be noted that a progression manual is available from Blackhawk Products for this system. Using this manual, the 2/3 depths can be progressioned using six blanks or less, even if all the cuts appear as 2/3 depths.

By design, this tool accounts for the various changes in tolerances from lock to lock, including wear-and-tear. Once this tool has been mastered, a key can be produced in 10 minutes or less.

The next tool is the EEZ READER Alpha-Tech Tool by H.E. Mitchell Company. H.E. Mitchell makes reader keys for many foreign car locks. The key and slide gauge are shown in photograph six. To use, insert the key into the ignition lock to trap a wafer in the cutout area of the key. Putting the correct tension on the wafer and the front of the lock, the trapped wafer can be read using the index marks on the key and slide.

To read the bottom or back wafers, the kit includes a mirror which fits on the outside of the lock bezel. With the help of a mirror and a flashlight, the key is inserted with the cut out in the back of the lock and it now can be read in the mirror.

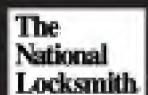
Photograph seven shows the mirror in place. Now the key can be read with the indicators facing away from the locksmith.

To handle the 2/3 depth problem, one index line is used to mark both depths. If the index line of the slide is



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8. This drill template is used for finding the sidebar.

in front (on the lock side) of the index line on the key, that tumbler is a 2 depth. If the index line of the slide is in back of the index line on the key, the tumbler is a 3 depth.



9. Close up of drill template installed. Drill and push in on sidebar to impression lock or remove lock from column.

It should be noted that this reading was done on a new lock. Because the tolerances of these locks are so inconsistent, and in cases of wear-and-tear, these index lines may not align exactly as they do on a new lock. Like any skill, it takes practice to receive consistent and correct results. Like the AlphaCracker, this tool makes fast work of the Alpha Tech ignition.

Photograph eight shows the last tool, a template with two pre-drilled holes in it, offered by Dedge's Lock & Key. This tool marks the position of the sidebar and another broaching. The tool is used to drill and pick for the sidebar of the lock. The secondary upper hole is if you turn the lock too far and the side bar gets caught in the secondary broaching. Photograph nine is a close up of the tool with a punch.

This tool works well for making a first key if the lock is already off the car. The tool can be used to pick the lock so the transmission shifter cable can be removed allowing the lock to be removed from the car.

The lock is also rather easy to impression when you have pressure on the sidebar. Prep the blank, and pre-cut the correct spaces. Impression the key as normal while applying pressure to the sidebar.

In conclusion, all these tools work well, once you are confident and have the technique mastered. Purchase a new lock and practice, practice, practice. If you cannot master the tool, find someone who can and ask for help. Associations are good for this, as well as many locksmiths. Generate Alpha Keys and Prosper!

Aero Alpha Tech try out keys are available from Aero Lock, P.O. Box 16434, Memphis, TN 38186-0434. Phone 800-627-9433.

Baxter Alpha Tech try out keys are available through Baxter distributors.

The AlphaCracker by Saber Tool Company is available from Allied Lock & Supply, P.O. Box 3137, Youngstown, OH 44513-3137. Phone 800-544-2102 or 216-726-0866, Fax 216-726-0865.

The Alpha-Tech Tool is available from the H.E. Mitchell Co., 800-626-5625.

The drill guide is available from Dedge's Lock & Key, 616 Hamilton St., Jacksonville, FL 32205. Phone 904-387-2656.

The Alpha Tech 2/3 Progression Manual is available from Blackhawk Products, 25913 County Rd. T.5, Dolores, CO 81323. Phone 303-882-7191.



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NEWSMAKERS

New Products and Industry News

Breakaway Padlock From Master Lock

"Breakaway-shackle" padlocks from Master Lock permit immediate access to emergency equipment, fire hoses, extinguishers, critical controls and valves in crisis situations.

The No. 500BRK padlock is normally opened with a key; however, its specially constructed shackle can easily be shattered by blow from a hammer, wrench, fireman's ax or other tool when rapid, emergency access is needed.

The No. 500BRK helps prevent vandals or other unauthorized personnel from tampering with important equipment. It provides the protection specified by fire insurance underwriters to safeguard equipment. The No. 500BRK can be ordered keyed-alike, so an entire padlock system can be operated with the same key.

Specifically for industrial and institutional use, the



industry, is launching a new key management software program, Site Master 200.

The new software package, designed for ease of use, was developed by Schlage to help facility managers and building owners control their key systems. Demonstration and full versions will be distributed through Schlage product dealers who are now taking orders.

Site Master 200 allows the user to keep track of keys in terms of number of keys issued, keys lost, keys returned and/or keys damaged. The user can monitor not only the quantity of keys involved, but also related information about the people holding the keys to doors in a particular room or office.

One of Site Master 200's most important features is its ability to reintegrate old key combinations or bitings back into the masterkey system, thus extending the life of the system.

For FREE Information
Circle 218 on Rapid Reply

Major Manufacturing's Re-usable Safe Info Charts

Major Manufacturing's new "Safe Info Charts" is a quick, easy and economical way to display information for

Master Lock No. 500BRK provides the tamper protection needed while allowing quick access.

For FREE Information
Circle 217 on Rapid Reply

Site Master 200 By Schlage

Schlage Lock Company, a leader in the commercial lock



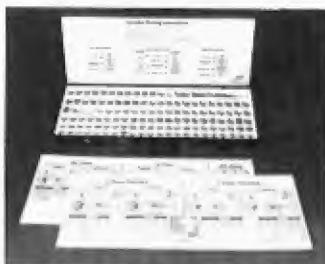
retail safe sales. The charts, made from a non-scratching, rubberized, magnetic backed vinyl material, is receptive of most ball point pens. Spaces are designated for Safe Manufacturer, Model, Rating, Inside and Outside Dimensions, Weight and Price.

The SIC-5 charts are 4" (w) x 5-3/4" (h). Copy is printed in an eye catching red on a white background. The SIC-5 charts can be re-used by removing the old writing with window cleaner and a dry cloth. SIC-5 "Safe Info Charts" are available from your distributor in packs of five.

For FREE Information
Circle 219 on Rapid Reply

New Corbin Russwin Pin Kit

Corbin Russwin Announces its new deluxe pin kit PK-1070 for all key classes, depths systems and plug diameters. The kit is furnished in a sturdy metal case with a handle. Instructions are printed inside the lid for determining the pin stacks of conventional, I-Core and master ring cylinders. A separate laminated chart contains all key bitting and pin length specs for the



popular key classes and depth systems.

The Corbin Russwin Cylinder Manual, available separately, provides additional technical information.

For FREE Information
Circle 221 on Rapid Reply

New Keyblanks By Kustom Key

Kustom Key, manufacturers of the popular personalized K3 Neuter Bow, introduced several new keyways. These blanks include the new Corbin/Russwin Series, the Master 6000 and 7000, and the Kwikset Titan, including the control key. All of these keyways are available personalized with your company name and logo incised or embossed on the head of the key. Also available are several popular safe deposit keyways.

For FREE Information
Circle 220 on Rapid Reply

94 GM Ignition Tool By AAble Locksmith

AAble Locksmiths has designed a tool kit enabling you to remove the new 1994 GM nine wafer ignition cylinders in less than five minutes with no damage to the lock.

The kit consists of a hardened drill guide block, drill bit and arbor stop guide, a side bar pressure tool, water pressure tool, and



Continued on page 15

Continued from page 12

special plastic plugs. It will work on all three types of cylinders: with button, without button, and VATS system.

For **FREE** Information
Circle 269 on Rapid Reply

Security Lock Stocks Locknetics' Pentagon Series

Security Lock Distributors offers a complete inventory of Locknetics' Pentagon 100 Series that merges access control with electronic auxiliary locking capability in one unit. The series includes five models with superior holding strengths of 1,500 to 1,650 pounds.

Combining access control and electronic auxiliary locking, the Locknetics' Pentagon 100 Series is a new generation of micro-processor-controlled electromagnetic locks. The Pentagon Series provides on board logic for TouchEntry access control readers, and the integrated design means reduced installation cost. The new Locknetics Series also meets the security demands of most facilities.

For **FREE** Information
Circle 222 on Rapid Reply

Column Lock By Lok-Itt

The Lok-Itt Company has developed a super-strong column lock that offers the



ultimate in anti-theft car protection, yet remains conveniently in place when the car is in use.

Easy to install, this new unit fits most GM cars and Chrysler Jeeps and prevents steering column damage as it protects the ignition switch. It is ruggedly built of heavy gauge steel, and coated with

durable, attractive vinyl. The unit comes complete with an anti-steering bracket to prevent the steering wheel from turning when the vehicle is not in use.

For **FREE** Information
Circle 223 on Rapid Reply

Sentex Systems Code Access System

The MINIkey system is a new, low cost code access



system with built-in keypad lighting. This rugged and reliable system can be purchased in capacities of 5, 100, and 500 codes with prices starting as low as \$250.

The MINIkey is very compact and attractive. From the painted black housing and brushed stainless steel faceplate to the recessed, sidelite metal keypad, the MINIkey makes an impeccable statement of quality and simplicity. If an entry requires a more elegant design, the MINIkey may be ordered with a polished stainless steel finish or with a polished brass finish and a classic "ogee" profile. Painted finishes are also available.

Despite its size, the MINIkey is loaded with lots of features not normally found in other code access systems. These include the recessed and sidelite keypad, variable code length (4- or 5-digits), two relays, remote keypad capability, an ability to latch either relay, and a clock input for timed control of codes.

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Jensen Tools offers Weka's Electronic Repair



Manual that provides the beginner as well as the professional with clear and concise information on how to repair and maintain a wide variety of electronic equipment without mistakes.

Information in the large three-ring binder is laid out in a logical and easy-to-find manner. It is divided into sections that cover electronic repair basics, tools and test equipment, trouble shooting and maintenance, with lots of repair tips and helpful advice.

Each section includes theory of operation, specific repair instructions, and schematic diagrams, with safety as the most important consideration.

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National Multi-Cam Locks

National Cabinet Lock Multi-Cam mail box locks furnished with five cam configurations to fit most popular interior and exterior locking mail boxes.

The C8730-14A lock is designed for interior archi-



tectural mail boxes used in apartments, condominiums, schools and lobbies. Each lock is furnished keyed differently and is packed with five different cams, two keys, a "sems" cam screw and instructions.

The C8735-14A lock is for exterior, pedestal-mounted neighborhood boxes. A keyway dust shutter protects the mechanism from the elements. Each unit is furnished keyed differently with three keys, five different cams, a cam nut, lock washer and instructions.

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Xtronic 3000 By CorKey

The Xtronic 3000 is a card operated, completely mechanical guest room lock with full hotel function capability. It requires no batteries, electrical connec-



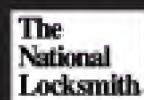
tions or complex computer interface and changes code automatically with each new card insertion.

The Xtronic 3000 incorporates an interconnected 1" tubular deadbolt and meets or exceeds all ADA specifications.

The Xtronic 3000 is user friendly and is not dependent upon complicated computers or temperamental batteries. The patented magnetic coding withstands the most rigorous of use tests and can be installed on outside doors without the need for special weather protection.

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GENERAL SECURITY

THE ARROW M SERIES KNOBSET

Test Article #61

By Giles Kalvelage

Arrow Lock of Brooklyn, New York manufactures a quality line of commercial grade architectural hardware. Arrow's "M" Series knob lockset is Grade 2, designed for light



1. The Arrow M Series, Grade 2 knobset.



3. The knob catch release hole is found just off horizontal or roughly the 10 or 4 o'clock positions.



4. After the knob is removed, gently remove the cylinder from its back.



5. The latch and chassis must interlock correctly to operate.

duty commercial or heavy duty residential use, and is rated for Class

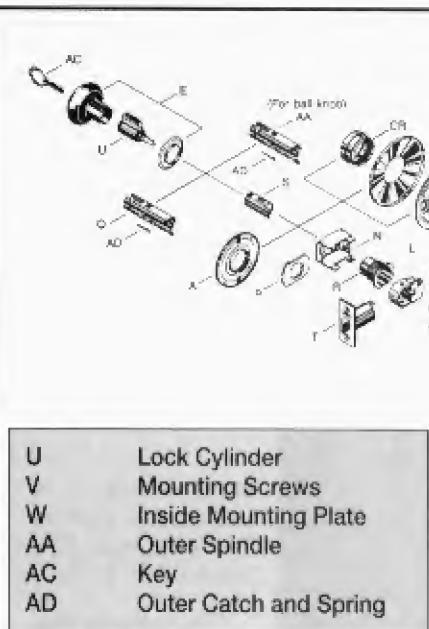
A rated firedoors. Arrow locksets are popular among locksmiths because of

Function	Description	Operation
M01	Passage and Closet	Latch by knob either side.
M02	Privacy	Latch by knob either side, except when inside push-button locks outside knob. Outside knob unlocked by turning inside knob, turning outside emergency slot, or closing door.
M03	Communicating	Latch by knob inside, outside is blank plate.
M04	Terrace	Latch by knob either side except when inside push-button locks outside knob. Closing door or turning inside knob unlocks outside knob.
M05	Communicating	Latch by knob either side except when turn-button locks both knobs.
M08	Dummy Pull	1/2 dummy trim with no latch.
M11	Entrance and Office	Latch by knob either side except when pushing turn button locks outside knob. Unlocks by key in outside knob or by turning inside knob. Turned inside button keeps outside knob locked.
M12	Storeroom and Closet	Outside knob always locked. Latch by inside knob or key from outside.
M14	Service Station	Latch by knob either side except when push-button locks outside knob. Unlocked by turning inside knob, closing door, or using key in outside knob, except when fixed in locked position by turning coin slot in inside knob.
M15	Hotel/Motel	Latch by inside knob only. Outside knob always rigid. Key will retract latch except when pushing inside button shuts out all keys except emergency key. Inside button activates outside visual occupancy indicator on cylinder face. Turning inside push button with spanner key locks button into fixed position. Button cannot be released except with spanner key.
M17	Classroom	Inside knob always free. Outside knob locked or unlocked by key from outside
M18/31	Communicating	Latch by knob either side except when key locks its own knob.
M32	Public Entrance	Latch by knob either side except when outside knob locked by inside key. Outside key will retract latch.
M33	Asylum	Both knobs always fixed. Latch by key either side.

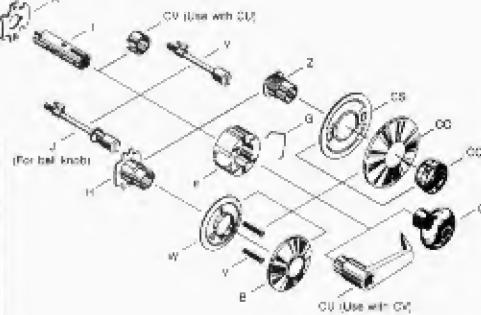
Table 2



Item	Description
A	Outside Rose
B	Inside Rose
C	Inside Knob
E	Outside Knob with Sleeve
F	Housing
G	Housing Spring Clip
H	Cap
I	Inside Spindle and Catch
J	Inside Plunger and Button
K	Inside Plate
L	Restoring Slide
M	Frame
N	Slide Springs
O	Outer Plate
P	Outside Hub and Cap
S	Outside Cam
T	Deadlatch



6. The exploded view of the M11 series knobset and leverset. This parts list includes only those parts used with our M11 knobset sample.



their quality, cost and because they are generally not marketed through the home hardware and home improvement centers.

Identification

The Arrow "M" Series knob lockset can be identified by the Arrow name on the latch faceplate and a visible spring catch holding the inside rose in place. (See photograph 1.)

Functions

Arrow "M" Series knob locksets are available in most standard functions. (See table 2.)

Removal

Excepting fixed knob functions, a key is not required to remove the outside knob from the lockset if the lockset is unlocked. Note that the

access hole on the outer spindle is offset from the three or nine o'clock position from the knob catch. (See photograph 3.) This means that the outside knob must be turned to align the knob catch with the access hole, allowing it to be depressed.

Once the knob is turned and the

catch is visible from the access hole, depress the catch with a probe, nail or other object and pull the knob off of the spindle. Note: Arrow uses cylinders with vertical tailpieces. The lockset does, however, accept retrofit cylinders with horizontal tailpieces. If a cylinder with a horizontal tailpiece is used, both the knob and the cylinder



7. After removing the spring clip, slide the housing off the chassis.

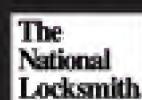


8. Remove the Hub and cap.



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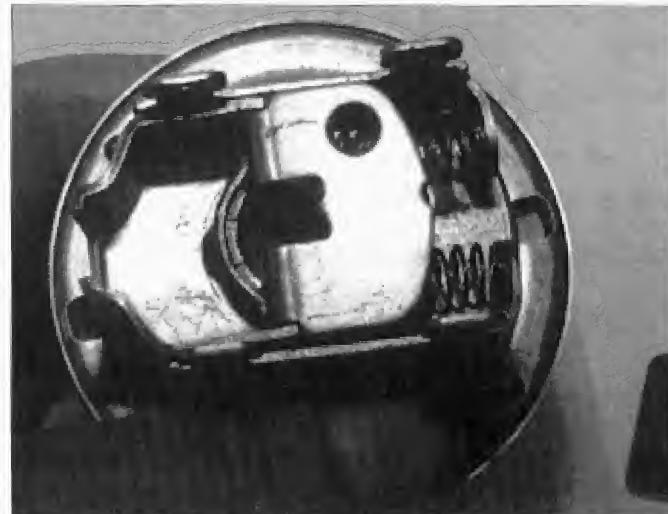


have to be turned in order to remove the knob. Installation is the reverse.

After the knob is removed, massage the cylinder toward the back of the knob to work the knob sleeve off of the back. (See photograph 4.)



9. Remove the inside plate to gain access to the slide and slide springs.

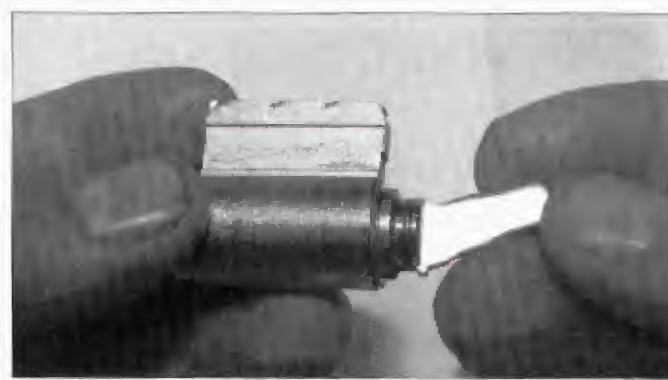


10. With the inside plate removed these springs are prone to flying and becoming lost.



11. Removing the outside spindle.

When the sleeve separates from the knob, use your fingers to completely remove the sleeve from the knob. Using a



12. If not using a hollow plug follower, remove the cylinder tailpiece.

screwdriver is faster and easier, but can mar the finish of the knob.

To remove the lockset from the door, depress the inside knob catch and pull the inside knob off of the chassis. Using a flat-blade screwdriver at the two o'clock position, gently pry the inside rose off of the mounting plate. Remove the two mounting screws from the mounting plate. Remove the mounting plate.

Pull the outside knob and chassis from the front, out of the door. Remove the two mounting screws from the faceplate of the latch or deadlatch. Remove the deadlatch. Installation is the reverse. Remember, during installation the ears of the latch or deadlatch must interlock the housing of the lockset to operate properly. (See photograph 5.)

Lockset Disassembly

For sample purposes, we will disassemble the

Entrance and Office function, M11 Knob Lockset. (See illustration 6 for an exploded view and parts list. Arrow does have trim designs that allow for the use of a lever knob on the inside handle. Where parts vary from our sample, they will be ignored.)

To disassemble:

1. Depress inside catch and remove inside knob.
2. Remove inside rose and inside mounting plate.
3. Gently remove the housing spring clip with your fingers or other tool.
4. Slide housing off spindle (See photograph 7.)
5. Remove Hub and cap (See photograph 8.)
6. With thumb depressing the restoring slide, gently turn and rotate the inside spindle, catch and turn-button assembly until it releases from the inside plate and restoring slide. The turn-button will slide out of the spindle after it is released from the inside plate.
7. Gently pry one of the ears of the frame against the inside plate to



13. Remove the C clip from the back of the plug.



14. The plug removed and ready for keying.



remove the inside plate. (See photograph 9.) Caution must be used to prevent the slide springs from shooting across the room! (See photograph 10.)

8. Gently lift out the restoring slide.
9. Lift or drop out the outside cam from the outside spindle and catch assembly.
10. If it has not already been done, remove the outside knob from the outside spindle and catch. The outside knob can be removed by turning the knob so that the catch lines up with the access hole of the outside hub and cap, depressing the catch with a probe, and pulling the knob off of the spindle. Alternatively, the catch can be released with a probe from inside the outside spindle. Once the catch is released, pull outward on the knob for its removal.
11. Slide the outside spindle and catch through the frame and outside plate. It will be necessary to twist the spindle so that the boss and catch will fit through the hole in the outer plate. (See photograph 11.)
12. Slide the outer plate out of the frame.
13. Unscrew the outside rose from the outside hub and cap and the hub and cap will slide through the frame.
14. Should it be necessary to remove the catch from the spindles, gently remove the catch springs from the spindles.

Reassembly is the reverse of disassembly.

Cylinder Servicing

To disassemble the standard Arrow cylinder for rekeying or servicing:

1. Unsnap the tailpiece by gently rocking it off of the cylinder plug. If using a plug follower that fits over the tailpiece, this step is not required. (See photograph 12.)
2. Remove the "C" clip from the back of the plug with a screwdriver or other comfortable tool. (See photograph 13.) The Kwikset removal tool works well for this.
3. Turn the key in the cylinder and carefully slide the follower through the shell. (See photograph 14.)
4. Rekey or service as necessary, reverse the procedure for reassembly.

Keying

The Arrow M Series locksets come

Continued on page 85



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AUTOMOTIVE SECURITY

Test Article #62

by Mike Hyde

The Ford Aspire is one of the latest additions to the Ford Motor Company product line. The Aspire is made for Ford by Kia. Kia also made the Ford Festiva. The Aspire is produced in a two-door and four-door model, all are hatchbacks. I surveyed both the two-door and four-door models. The ignition is a side-bar lock. The door and trunk cylinder locks are not side-bar. There is no glove box lock. The key has ten cuts on it. There is no valet key for the Aspire. (See photograph 1.)

Door Locks And Opening Techniques

The door panels are fairly simple to remove. On the two-door model there is five screws to remove. (See photograph 2.) Remove the two screws on the right front section of the door panel, then remove the retaining

FORD'S 1994 ASPIRE



1. The 1994 Ford Aspire.



2. Inside door panel of the two-door Aspire.



3. Two-door Aspire with door panel removed.



4. Two-door vertical lock linkage.



5. Four-door vertical lock linkage.



6. The door lock is held in by a standard horseshoe style clip.



screw for the inside door release handle, then remove the screw located in the door pull cavity. The last screw to remove is the only hidden screw on the panel, located on the rear-middle section of the panel.

Now you can remove the panel, by pulling out on the panel, as it uses standard panel fasteners. On the 4-door models there is no hidden screw on the rear-middle section of the door panel. (See photograph 3.)

Photograph four shows a horizontal slide linkage tool in position on the two-door model and photograph five the tool in position on a four-door model. While both are vertical lock buttons, notice the difference in linkage positioning.

The door locks are held in position by a horseshoe clip that is positioned on the top of the cylinder. (See photograph 6.) There is a number on the tailpiece, but it is not a code number.



7. Aspire door lock has tumblers 3 through 10.

The door and trunk cylinders contain eight tumblers, for positions 3 through 10. (See photograph 7.) For keying the Auto Security Products Isuzu tumblers ASP# P-24-101 through P-24-104 will work although some filing is necessary. The closest face cap to work on these cylinders is the large AMC tailgate lock facecap All-Lock part A6514 and Briggs & Stratton part 320376.

Ignition Lock

Photograph eight is the ignition lock. (Stop now and disconnect the battery if you're going to work on the ignition.) There are three screws that hold the plastic two-piece shroud together. Once you remove the three screws you will need to separate the shroud, it's a tough one. The shroud fits very tightly together because of the type of clips holding it.

Once the shroud is removed, it



8. The ignition is part of a two-piece clam shell column.

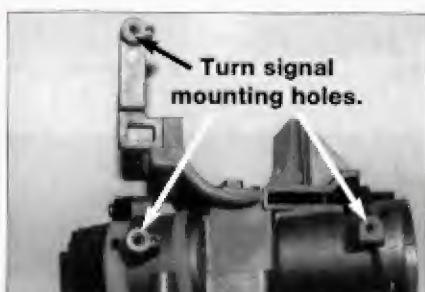
should be apparent that the steering wheel need not be removed to service the ignition assembly. This is a plus since all Aspire's are equipped with Airbags. Photograph nine is a side view of the ignition lock assembly. There are three screws that connect with the turn signal assembly to the cylinder housing bracket. (See photograph 10.) The three screws that hold the turn signal to the ignition lock housing can be removed using a 90 degree angle Phillips screwdriver.



9. Ignition with shroud removed.

On models that have an automatic transmission there is a shift cable attached to the ignition lock housing, simply remove the bolt with a 10mm wrench and slide off the cable.

The ignition cylinder can be removed by removing the four tension pins located around the front section of the ignition housing. Drill a 7/64" hole next to each pin and then pry the



10. The turn signal assembly is attached to the ignition housing brackets using three screws. These must be removed before removing the ignition.



11. Disassembled ignition. Notice the sidebar notches in the side of the tumblers.

pin up and out. Once you have all four pins out, slide out the lock cylinder.

The ignition cylinder is a side-bar lock. Once you have the cylinder out you should see the spring that sits in the back of the plug. To disassemble the cylinder remove the Tru-arc ring on the back of the cylinder and then slide the plug out the front. The tumblers used in the ignition cylinder are what is commonly referred to as "Universal" tumblers. No matter what key is inserted in the cylinder the tumblers never go above the shear line. (See photograph 11.)

The tumblers are notched on the side in different positions to determine the depths. There are eight tumblers in the ignition lock, located in positions 1 through 8. Photograph 12 is a close-up of the ignition cylinder plug, showing the side-bar. There are currently no replacement tumblers available.



12. The plug with depressed sidebar.

Trunk Lock

In photograph 13 you can see the



13. With the hatch raised and panel removed, the trunk lock is found at the lower left portion of the door.



trunk lock is positioned in the lower left corner of the hatch if you're on the inside of the car. The inside trim panel must be removed to get to the lock cylinder. It uses steel panel fasteners, that can easily be reused to reassemble the trim panel. Lift outward on the panel to remove.



14. The only code numbers available are on a tag with the original keys.

The trunk lock is held in place by a standard horseshoe clip. It is similar to the door cylinders and the closest replacement face cap. The trunk lock has tumblers in positions 3 through 10 and uses the same type of tumblers that the door cylinders use.

Making The First Key

There are no codes located on any locks of this car. The only place the code is located is on a metal tag supplied with the factory keys. (See photograph 14.)

There are three methods for generating a first key for the Aspire:

Method #1: Impression the door or trunk cylinder to get cuts in positions 3 through 10. Then progression cuts 1 and 2 in the ignition to make a master key.

Method #2: Remove and disassemble the door or trunk cylinder to get cuts in positions 3 through 10. Then progression cuts 1 and 2 in the ignition to make a master key.

Method #3: Remove the door or trunk cylinder and sight read the wafers through the drain hole in the lock to get cuts in positions 3 through 10.

Then progression cuts 1 and 2 in the ignition to make a master key.

Specifications

Tumbler Locations

1 2 3 4 5 6 7 8 9 10

Ignition

X X X X X X X X

Doors, Trunk

X X X X X X X X

Code Series: B1001-2200

Key Blank: Ilco H70, Silca F034

MACS: 2

First cut: 1.045" (Measured from tip of key)

Cut to Cut: .091"

Depths: 1=.323", 2=.297", 3=.272", 4=.246"

NOTE: Some code books may have the depths in reverse order. Example: 4=1, 3=2, 2=3, 1=4.

Framon: Lay tip stop clip flat against left side of vice. Tip stop key against clip. Set first cut at .203".

HPC 1200: Use standard red tip stop. Set first cut at .095" (Specifications for shoulder stop not available at this time.)



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ELECTRONIC SECURITY

Test Article #63

by Tom Seroogy

Last month we briefly covered some of the different splicing methods, tools and components available to the technician. This article concludes with a more splicing and terminating procedures as well as samples of previously listed splicing techniques.

Soldering

Soldering is probably one of the oldest methods used for joining segments of wire and employs the use of a soldering gun or iron and solder.

Solder is a metallic alloy (typically a mixture of tin and lead). The low melting point of this material allows it to be used for joining wire splices and making connections. The solder material itself can take many forms or shapes including bars. More common

acid or flux to prepare the surface of the wires being spliced, current solders include a rosin core.

As the surfaces being soldered are heated, the rosin melts and flows over the surface of the spliced joint, preparing the surface and preventing it from coming into contact with oxygen. As the spliced joint continues to heat, the solder melts and flows smoothly over the surfaces to make a cohesive bond.

The soldering gun or iron is the handtool used to heat the wires being spliced high enough to melt the solder. While these guns or irons come in varying wattages, they all operate in a temperature range of 500° to 600° Fahrenheit. While some of the

guns and irons offer adjustable wattage settings, this does not affect the temperature range of the device. In other words, a 25 watt iron gets just as hot as a 500 watt iron. The important difference with iron size is not how hot

it gets but rather the size of the wire splice or joint it is capable of soldering.

The reason for this is as follows. Done properly, the material being soldered must be heated to a point that melts the solder. Notice that it is the wire or surface being soldered that melts the solder and not the gun or iron. If the solder is simply melted by the gun and dripped onto the splice or joint, the solder immediately becomes solid and does not properly flow over and adhere to the wire surface. The result is a bad solder joint often referred to as "cold soldering." These solder points are prone to corrosion, splitting and high degrees of resistance.

Because it is imperative that the splice or joint being soldered be heated properly, it is necessary that the soldering gun be able to heat the joint well enough to melt the solder. Splices made with smaller wire gauges require less power to heat. Larger, thicker gauged wire and joints require more power to heat correctly.

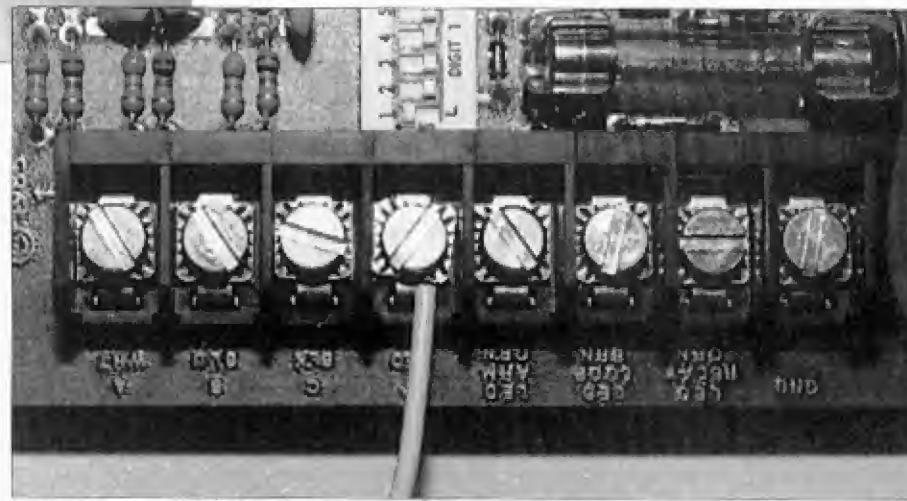
While not nearly so critical, a gun or iron that is too large for the joint



1. A common soldering gun and roll of rosin core solder.

today, however, is the convenient spools of wire shaped solder that offer the technician better control over the solder flow. (See photograph 1.)

Before soldering it is necessary to prepare the metal surfaces to be joined. Any oils, moisture or oxidation on the surface of the metal create a weak or quickly deteriorating solder point. While older types of solder required the application of tinner's



2. This terminal block is common to many control panels.

makes for its own difficulties. Not only is there more than enough power to heat the wires and the solder, but the

wires' insulating jackets as well. Using a too large soldering gun often ends up with the insulation melting and burning.

Soldering A Splice

With the correct size soldering gun or iron and solder with rosin core, soldering a splice or joint is fairly simple.

Remove the outer jackets and insulation from the wires being spliced. On stranded wire twist and trim the ends.

Next, splice the wires. Generally a ratail joint is used.

With the wires joined, apply the soldering gun or iron to one side of the splice and the solder to the other.

With the heat applied, wait for the rosin and the melted solder to wick into and cover the splice.

Allow the splice to cool before trimming and taping.

Terminating

Many times, and usually back at the control panel, it is necessary to connect the end of a wire loop to a terminal block or board. While there are hundreds of styles of terminal blocks, connecting the wire to the block or terminating the wire, like soldering, is simple. There are, however, a few precautions necessary to prevent problems.

Most blocks use screw or clamp down terminal connectors separated by small partitions. The partitions serve to keep the wire of one terminal from accidentally contacting the wire or terminal screw of another. (See

photograph 2.)

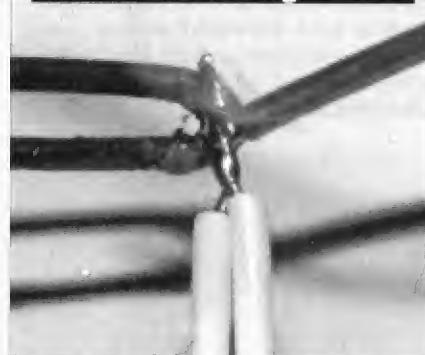
On clamp down terminals, trim just enough insulation from the end of the wire being terminated to fit under the clamp. Insert the wire under the clamp up to the insulation. If using stranded wire, twist it before placing it under the clamp. Once the wire is in place, tighten the clamp. Make sure that there are no loose strands or long ends projecting out from the block. These are the biggest culprits for causing shorts against the control panel box, control panel components and/or other wiring within the control panel.

As a precaution, it is best to periodically check the connections. Vibrations as well as contracting and expansion caused by heat and cold can cause the connections to eventually loosen. This is especially true of solid wire.

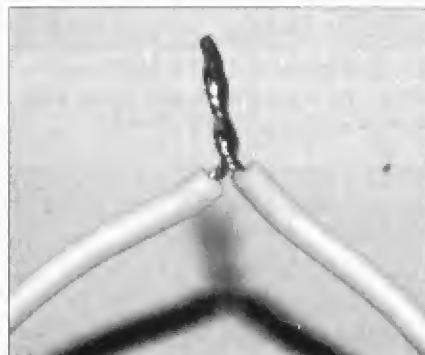
To help you better visualize the use of the different connectors involved with wiring, follow the short photo story starting at the left.



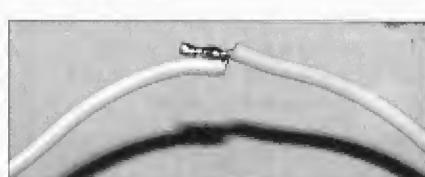
Soldering



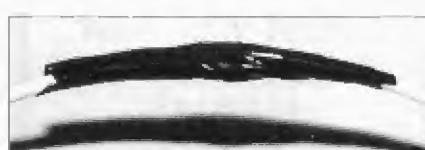
1. Heat the wire enough to melt the rosin core and solder.



2. After the rosin and solder have thoroughly wicked onto the joint, it is left to cool.



3. The splice is trimmed and...



4. taped.

Continued on next page

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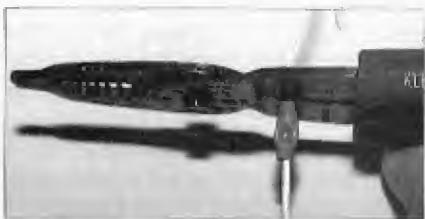
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Butt Connector



5. Prepared wire being spliced with a butt connector.



6. Crimping the butt connector.

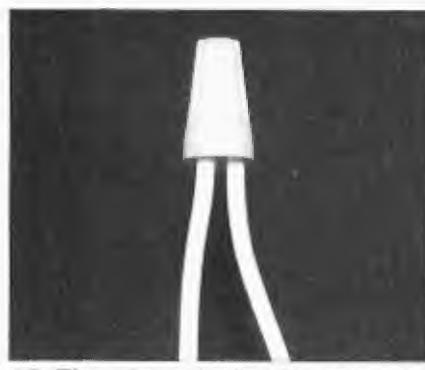


7. The butted splice.

Wire Nut

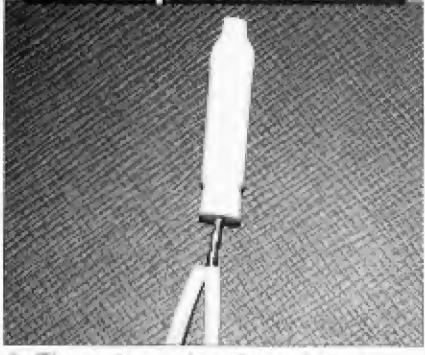


11. These wires are prepared for the wire nut.



12. The wire nut after it has been fastened onto the splice. Applying tape at this point will secure the splice.

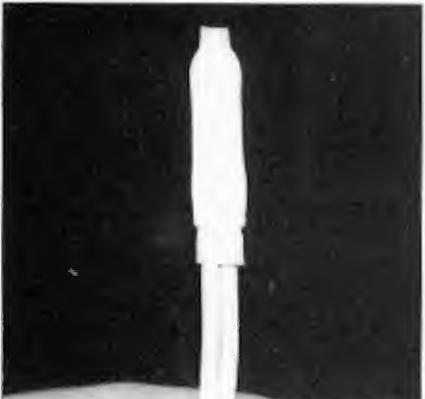
Crimp Connector



8. These two wires have been prepared for this cap or crimp connector.



9. Crimping the connector.



10. The finished connection can be left as-is or taped.

Terminating

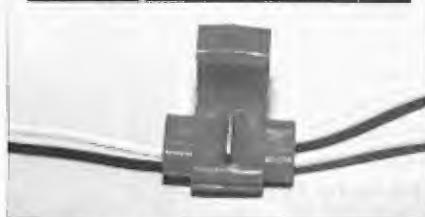


16. Terminating a wire to a screw down terminal on a transformer. Tightly spin stranded wire to avoid frayed and messy ends that not only look bad, but can pose shorting problems.



17. This termination is tight and snug. No frayed or loose ends are exposed to create problems.

Tap Connector



13. This tap connector is a simple and easy way to splice into existing wire.



14. Using a pliers, a small metal spade is depressed, piercing the wires and creating the tap.



15. The protective cover folded down, completing this tap splice.

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details.





BEGINNER'S CORNER

Sentry Safe Combo Change

As a new locksmith, someone will ask if you can either open a safe, or change the combination on a safe. Safe openings, by using manipulation or drilling is a specialty requiring education and training. However, combination changes can be done by an apprentice who has knowledge of all the functions of the lock.



by
Eugene Gentry

If you have taken a locksmith course, or have gone to locksmith school, most likely they gave you instruction on the basic principals and operation of combination locks.

Before any combination change can be made, all parts have to be checked to see that they are operating correctly. The combination should be run several times with the old combination number, and the customer should be asked if he has had any difficulty with the lock. Check for play in fence, bolt mechanism, and wheels. If the lock is not operating correctly, repairs need to be made before the combination change is done.

One of the combination changes that is less difficult is on a home owner size Sentry Safe. Remove the single screw on the back of the door to take off the cover plate. (See photograph 1.) This is a three wheel combination pack with false gates on the wheels. These

false gates are designed to deter attempts at manipulation.

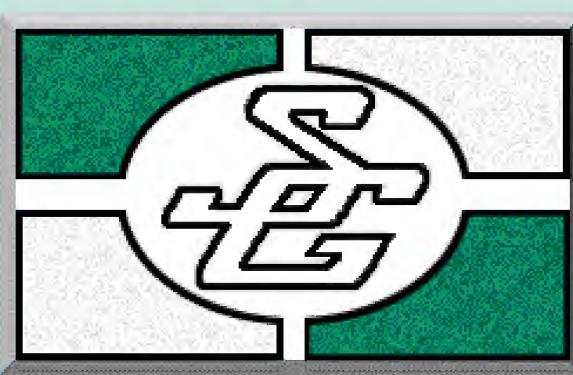
This type of combination lock is known as a direct entry. The fence is part of the bolt bar. Before the door can be opened, the gates have to line up with the fence. When the handle is turned the fence will enter the gates at the same time that the bolt is moving to the open position.

The third wheel on the lock is the drive wheel, connected directly to the dial. As you turn the dial, the drive wheel is turned. On this third wheel are 12 holes with a screw located in one of the holes. (See photograph 2.)

To change the combination, remove this screw with a screw driver, and place it in another hole. Just moving it one hole changes the combination completely. You will not know what the combination is until you line up all the gates under the fence.

Leave the back cover off, and while you watch the wheels, turn the dial four times to the left to clear the combination. Move the number one wheel, closest to the dial, until the gate is under the fence, then record the number. Turn the dial right twice until the middle, or second wheel gate is under the fence. Record this number. Turn the dial left until the third driver wheel gate is under the fence. When you record this number you will have the three numbers that are the combination.

Always try the combination with the door open at least three or four times to make sure it works. Then have the customer try the combination.



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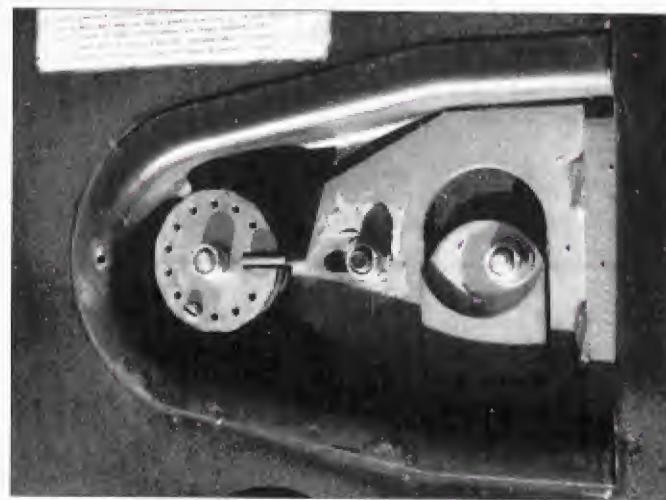
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1. The back cover of the Sentry safe.

This type of combination change is known as the screw change. Other types of changes are the hole change



2. The Sentry is a direct entry safe. Shown are the wheel pack, boltwork/fence and lever cam. Notice the screw in the wheelpack. Its position determines the combination of the safe.

make the change. One other type of combination change is the key

and the mesh change. Both of these changes are more difficult as the wheels have to be dismantled in order to

change. If you are going to do this type of change, you need to purchase a set change keys. Each different brand of safe has a different key that is used to make the change. Remember, always use the proper change key for the proper lock. Never use the wrong change key or attempt to modify the wrong key to fit.



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SELLING SAFES FOR HEAVY PROFITS

Safes are probably the single most expensive items a locksmith can sell. Because of this, they can bring in large amounts of money very quickly.

Selling safes can be a very profitable addition to your business. But don't go into it blindly. Find out as much as you can about the safes you plan to sell. As with any product, the more you know about it, the easier it is to sell. Knowing your product and what it will cost you, including shipping charges, will allow you to maximize both your sales and your profits.

Safes are probably the single most expensive items a locksmith can sell. Because of this, they can bring in large amounts of money very quickly. However, safes that don't sell quickly will tie up your money just as fast. This is why it is important to stock only the ones that will sell well. Unfortunately, there are no fixed rules for what will sell in your area. You will need to make your own choices based on the area in which you live and the customers you service.

A one-hour Class C fire safe is usually a good seller. Homeowners, small businesses, and corporate offices all need the protection provided by a fire-rated safe. Rotary hoppers, in-floor safes, deposit safes, and B rated burglary chests all appeal to commercial customers who deal in large amounts of cash. Gas stations and pizza parlors are both good prospects for these.

A good place to get information on many different safes is at trade shows. Here you can compare the models from different manufacturers, examine them up close, and see all the features of each. Shows sponsored by your local locksmith association are especially helpful. The booths at these shows are usually manned by the local sales representative. They know what sells in your area. Talk to them. They will be happy to make a few recommendations about what to stock. That's why they are there.

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**1. Part of being successful
at safe sales is letting the
world know you carry
safes!**



by
Steve Gebbia

If you are located in or near a large urban area, chances are there is a safe distributor near you. Often, you can pick up the safes yourself or get delivery in one or two days. Talk to your local distributor, they can be a salesman's best friend. Ask them what models they normally keep on hand and which models sell best in your area.

You should also familiarize yourself with the rest of the products available from each manufacturer. By knowing the entire product line and which models are stocked locally, you stand a better chance of selling a safe that you don't even have in stock yet. What can be better than selling something you haven't paid for yet?

Building Sales

Your existing customers are an excellent place to start building your safe sales. Send each of your commercial accounts a letter informing them that you now carry safes. Describe a particular safe that might appeal to them and include a brochure and a business card. Invite your customer to come into your showroom to see what you have to offer. Follow up with a phone call or a personal visit. Let them know that you also have other models available. (See photograph 1.)

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2. Attractively displaying the safes is an important part of selling the safe.

A service call is also a good place to find safe sales. As you do your routine service work, mention to your customer that you also carry and service safes.

Advertise your new product. Let as many people know as possible. That's the name of the game. Put it on your business card. Take out a listing under safes in the phone book. Put up a banner in your store window. As your sales increase, you may even want to change your business name to include the word 'safe'. One word of caution, though. Like anything else, don't overdo it. You can very easily spend more than you can afford. Take it slowly, spending what you can afford when you can afford it.

As your safe sales increase, increase your inventory. If a particular model doesn't sell well, then don't re-order it. Check with your supplier, many times you can get a quantity discount. This can be based on number of safes or on total weight of your order.

Don't forget to include the shipping charges in the selling price of the safe. Because of the weight, freight charges add up very fast.

Display Area

A separate safe display area is a great sales help. This can be in the same room as your lock displays, but there should be an area set aside just for safes. A clean, attractive display area will make it easier for your customer to see what you carry.

Forget about the 'hands off' policy. Let them touch it, spin the dial, open and close the door. Let the customer play with



3. Allow customers access to the safes, letting them close/open the door and spin the dial.

the safe. The longer he plays, the more likely he is to buy it. (See photographs 2 and 3.)

This can, however, cause a few problems. First, they spin the dial. Then, they look for the combination and realize that it's locked inside the safe! No problem. You did record the combination and serial number of each safe, didn't you? (On new safes you can also change the combination to a neutral number - such as four turns left to 50, then right to open. Just remember to change it back to the factory setting when you sell it.) Of course, kids love to play also. They'll put the keys inside rotary hoppers and then spin the handle - locking them inside the safe. Since most keyed safes come with two sets of keys, keep one set with the safe and the second in a locked key cabinet.

Delivery

A customer will expect you to be able to deliver the safe and, in some cases, bolt it down to the floor. Know your limitations. If a safe is too heavy or too large, hire a professional safe mover. Keep the names of at least two handy. This way, if one is not available, you have a back-up ready. Before quoting a price for delivery, find out as much about where the safe will go as possible. Personally visit the site if necessary. Some things you need to know are:

- What type of floor do we need to cross? Marble tile, ceramic tile and wood floors all need to be protected against damage.
- If there is carpet, is it white? White carpet stains very easily - bring a clean drop cloth to protect it or be prepared to pay to have it cleaned.
- How many stairs are there? Stairs are your biggest obstacle, often special equipment is needed to safely move a safe up or down a flight of stairs.
- Is it a straight shot or is there a turn in the staircase? If there is a turn, make sure there is enough room for you to turn the safe while it is on the hand truck or dolly.
- How wide is the staircase?
- Will the stairs support the weight of the safe and two men?
- Will the safe fit where the customer wants it?
- Are the doorways wide enough?
- Do I have the equipment to safely move this safe?

The first concern should always be safety. If you feel uncomfortable about moving a particular safe, don't! Hire someone else to move it for you. Hospital bills have a tendency to cut into profits very quickly.

If the safe has a removable door, remove it before delivery. This will lighten your load and prevent the possibility of accidental damage to the dial, handle or lock. Show the customer how to use the safe and make sure he understands. Have the customer test the combination while you are there.

Make sure that any arrangements concerning delivery are thoroughly understood by both you and your customer in advance. Put it in writing if necessary.

Equipment

If you plan to deliver the safe yourself there is some equipment you will need. (See photograph 4.) How much and what type will depend on how heavy a safe you want to move. The majority of home and small business safes weigh under 400 pounds. With the right equipment, one or two healthy men can move these safes. Basic supplies include:

- A hand truck. Buy one with a wide base plate and make sure it is rated to carry the weight.
- An appliance dolly. The extra height helps to balance taller loads and the strap keeps the load from shifting.

- An electric hand truck. These are very nice to have when bringing a safe up or down stairs. Remember, though, that they weigh around 175 pounds and need more room to maneuver than a regular hand truck. You may not be able to use these for every delivery.
- Rope. Always tie or strap the safe to the hand truck - especially on stairs.
- Drop cloths. Protect your customer's floor.
- Back support belt. They're not that expensive. Buy one for each safe mover and make sure to use them.
- Plywood, cardboard, and sheet steel. These will help you cross uneven surfaces. They will also spread the weight of the safe so that you don't damage delicate surfaces like marble or ceramic tiles.
- A stacking machine or small forklift. While not absolutely necessary, these will make it much easier to unload a delivery of safes when it arrives. Otherwise, you will need to take the safes off the back of the truck by hand.

The heavier the safe, the heavier and more expensive the equipment. Pry bars, Johnson bars, steel rollers, stacking machines, forklifts, and hoists are a few of the items you will need to move very heavy safes. Of course, you will also need a truck that will handle the weight of the safe and a way to get the safe onto and off of the truck.

Service What You Sell

Service after the sale shows that you are concerned with your customer's needs and that you run a reputable business. If you are going to sell safes, you should be able to provide basic safe servicing as well. The customer will expect you to be able to change the combination and repair any minor problems which may arise. Eventually, as your safe sales grow, you may want to learn safe opening

**4. Purchase proper moving equipment.**

procedures. Until then, you should be able to refer your customer to a safe technician who can open it for them.

If you don't have the knowledge you need, take some classes. Manufacturers and locksmith schools provide resident and on-the-road classes. Classes are also hosted by distributors and local associations all across the country. There is a lot of high quality education out there - take advantage of it.

Selling safes is not that much different than selling locks. Specialized education, additional equipment, and basic sales skills are all that you really need. Combine this with the business sense that made you a successful locksmith and you are on the way to fun and profits selling safes. 



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Cover Feature

SAFE BETS ON THE FUTURE

LaGard, Sargent & Greenleaf, Mas-Hamilton, Vindicator, AMSEC; electronic locks provide a variety of functions and features.

by John Greenan

Ten years ago there were very few electronic locks for safes on the market. The ones that were available were mostly found on imported insulated safes. These locks were often unreliable and relatively easy to compromise even with very little electronic knowledge.

Today, however, the safe market is changing. Business owners want to know who and when someone has entered their safe, plus changes in the U.L. standards for combination locks will make most group two mechanical locks a group three. Manufacturers are looking in other directions to meet the new group two rating without having to spend a considerable amount of money retooling their existing locks. Electronic safe locks seem to be the logical answer.

This leaves the safe and vault technicians faced with an ever widening variety of quality electronic locks from many different manufacturers. LaGard, Sargent & Greenleaf, Mas-Hamilton, Vindicator, AMSEC and others all offer electronic locks that provide a variety of functions and features, including one million true combinations, one to fifty user combinations, adjustable time-delay, programmable timelock, audit trail and much more.

What does all this mean to the technician of tomorrow? It means we have the opportunity to learn new installation, programming, servicing and trouble shooting techniques that provide us with the knowledge and expertise to sell, install and service these types of locks.

How can we learn about these new locks? There are many ways including your local locksmith associations, the National Safeman's Organization (NSO), the Safe and Vault Technicians Association (SAVTA), manufacturers' classes, locksmith and safeman schools, and *The National Locksmith*.

To begin making money with these new locks, start by offering them to your present customers and to new prospects that are looking for an easier, faster way to access their safes. These locks are perfect for both the home owner who only enters their safe occasionally and has difficulty remembering the rotations of a mechanical dial, as well as the commercial customer who needs to open their safe many times a day.

The cost of these electronic safe locks is becoming more and more affordable. Many of these units can be added to a new safe for under \$175, while retrofitting one to a new or existing safe can cost \$200 and up.

Most of the tools required to install these locks are already in the safeman's tool kit with the exception of an AMP terminating tool (part# 1-231652-1), used to trim and strip the cables and crimp the modular plugs onto the cable leads. This tool is made by AMP Inc., 1523 N. 4th St., Harrisburg, PA 17102 and works very well on the AMSEC KPL 2000 and the LaGard locks.

What may change drastically for the safe technician is the servicing and opening of safes with electronic locks. Many of these locks are designed with limited field serviceability, servicing is mostly component or complete lock replacement. There is no dialing the combination a number higher or lower to compensate for a shifted dial or ring. Manipulation as we know it is definitely out of the question.

In case of either a lost combination or a malfunction, drilling to open may be the only option. Because an existing combination is needed in order to reprogram most of these locks, saving a lock with a lost combination may be of little benefit. And in the case of a malfunction, it is necessary to retract or move the lock bolt, making repair or replacement of the lock necessary.

While offering the end user the ability to change the combination and the lack of mechanical components creating fewer service problems, the introduction of electronic safe locks does not necessarily mean less business for the locksmith. It does, however, mean doing a different type of business. Locksmiths will still be called to diagnose problems with these locks, ranging from battery replacement to complete lock replacement, to container opening and everything in between. Understanding the ins-and-outs of these locks will only give you the upper hand in getting the service calls.

Besides, mechanical locks will always be around. They have proven reliability, and offer a cost savings over the electronic locks. Electronic locks have yet to prove their reliability. Even with the intense amount of laboratory testing they do receive, nothing can prepare these locks for what the end-users will put them through.

The electronic access control that these locks provide is rapidly becoming a larger part of the locksmith industry. More and more automobiles have keyless entry or keys with electronics incorporated. Commercial buildings are using more and more electronic access systems, there is even an electronic safe deposit lock available. Electronic safe locks are in our future – Safemen, be prepared!

As a final note, the NFBAA (National Fire and Burglar Alarm Association) is going from state to state passing legislation to license electronic access control. This will affect the locksmith/safe technician working on electronic safes. We must however stay aware of the laws being presented in each state. If electronic safe locks are defined as electronic access control, these laws have the ability to forever lock us out of business.

In future articles we are going to take you step by step and retro-fit these locks on to safes and explain the different features; benefits, and opening procedures of each lock. The rules are changing – if you don't know the rules you can't play the game.





SAFES THAT MEET A HIGHER STANDARD

When recommending a safe, ask yourself whether the business owner would really be satisfied if the safe were compromised.

Cover Feature

There are many safes on the market. Some are intended to protect documents against fire, others to keep honest people from becoming dishonest. But there is a small niche market of safes designed to protect items of high individual value from heavily armed pre-meditated intruders. These safes are classified as High Security Safes.

High security safes were created primarily to fulfill the needs of the banking industry. But increasing crime in the jewelry industry has prompted insurers to demand the use of high security safes for storage of high value individual items such as jewelry, diamonds, precious metals and cash.

Three factors must always be considered when determining the proper safe needed to be purchased: value, environment and security level. Value refers to the total dollar equivalent value of the items to be stored. While one business may store \$50,000 another may store upwards of \$500,000.

The place where the valuable are to be stored makes a big difference on the security level of the safe required. A safe located in a secured building requires a lower level of security than one located in a retail business far from other security measures.

Lastly, the security level of the safe itself. This refers to the ability of the safe to withstand a premeditated attack using various tools.

Other factors that should be taken into consideration include the reputation of the safe manufacturer, years the manufacturer has been in business, support the manufacturer gives the dealer network, possible future requirements, insurance premium differences for higher security level safes, can the manufacturer still support a used safe, etc.

Keep in mind that dealers promote the safe brand they represent. Dealers have been known to claim that safes from manufacturers they don't represent have been compromised. Without knowing who I was, dealers have shown me letters and newspaper clippings to justify these claims. But for every case there is "the rest of the story" that we will never know. In choosing a safe supplier be wary if presented with claims of how bad the other guy's safe is, and don't use the same technique on your customers.

Many high security safe users are pushed into making the purchase by their insurance company. As a result of this

customers often they lose sight of the purpose the safe is to perform. Some might say that the purpose is to pacify the insurance company. Well, this is certainly one consideration. But ask yourself whether the business owner would really be satisfied if the safe were compromised, even if insurance fully covered the value of its contents? Probably not!

In addition to the cost of replacing the safe, consider the profits lost because there is no product to sell; trying to explain the compromised safe to the police; and, inevitably, the higher premiums and strained relationship with the insurance company? One has to consider that a compromised safe has more repercussions than just the immediate loss of goods.

What other purposes does a safe perform? A high security safe can be viewed in one of two ways. It will either resist the efforts made against it or it can deter someone from ever making the efforts in the first place.

So, how does one go about determining the best safe that matches your requirements? There exist a few independent organizations that publish information allowing a prospective buyer to make an informed decision. United Laboratories (UL) is one, the Dutch Safe Rating Committee is another. (See illustration 1.)

UL rates safes by their ability to withstand direct premeditated attack using various tools. Their rating system in ascending order from least secure to most secure observes the following convention;

TL-15.....15 minutes.....Tool attack from the front.
TL-30.....30 minutes.....Tool attack from the front.
TL-30x6.....30 minutes.....Tool attack from six sides.
TRTL-30.....30 minutes.....Tool and torch attack from the front.
TRTL-15x6.....15 minutes.....Tool and torch attack from six sides.
TRTL-30x6.....30 minutes.....Tool and torch attack from six sides.
TXTL-60.....60 minutes.....Tool, torch and explosion attack.

The Dutch Rating System follows basically the same convention, but also includes a sub-division of some security levels. The Dutch Rating Systems notes that there are differences between TL30's just as there are differences in TRTL-30x6's.

The time element of the security ratings assumes that all



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tools are present and that the attacker is fully aware of what he is dealing with. That is, he has developed a strategy for attacking the safe. The time refers to the actual time during which an attack is taking place.

Most High Security Safes also come with additional safety features. One such feature is the use of glass. Generally a glass plate is mounted on the front door between the locking mechanism and the door. Any attempt to drill through the door causes the glass to shatter. Studs mounted into the glass, fall away when the glass is shattered allowing secondary locks to trip and locking the whole system up. Major specialized work must then be performed to get the safe open.

Under realistic conditions most safes are attacked only after other alarms have been disabled. This allows the attackers as much time as they feel is needed. On numerous occasions thieves have had the entire weekend to attack the safes, and, depending on the incident, without success.

What safe is correct for your customer? This is a difficult decision. The most obvious answer is the highest security level. Not only does it almost guarantee the security of the valuables, but if the value of storage increases or the customer moves to another less environmentally secure location, it continues to serve them. Realistically, however, higher levels of security cost more money. A TL-30 11 cubic foot safe might cost about \$3,500, whereas a TXTL-60 can cost about \$18,000.

Aside from the higher costs associated with higher security there is the additional factor of weight. The greater the security, generally, the greater the weight. Sometimes the maximum weight is determined by the ability of the freight elevator. Other times it might be limited by the weight capacity of the floor. In some buildings, high security safes can only be placed on the floor over structural beams.

There is no hard and fast guide to determine which safe is correct for your customer. The following sections briefly

describe the security levels, and recommended considerations for each. References are made to the ISM line of safes because of their diversity and subsequent reputation for security. (See photograph 2.)

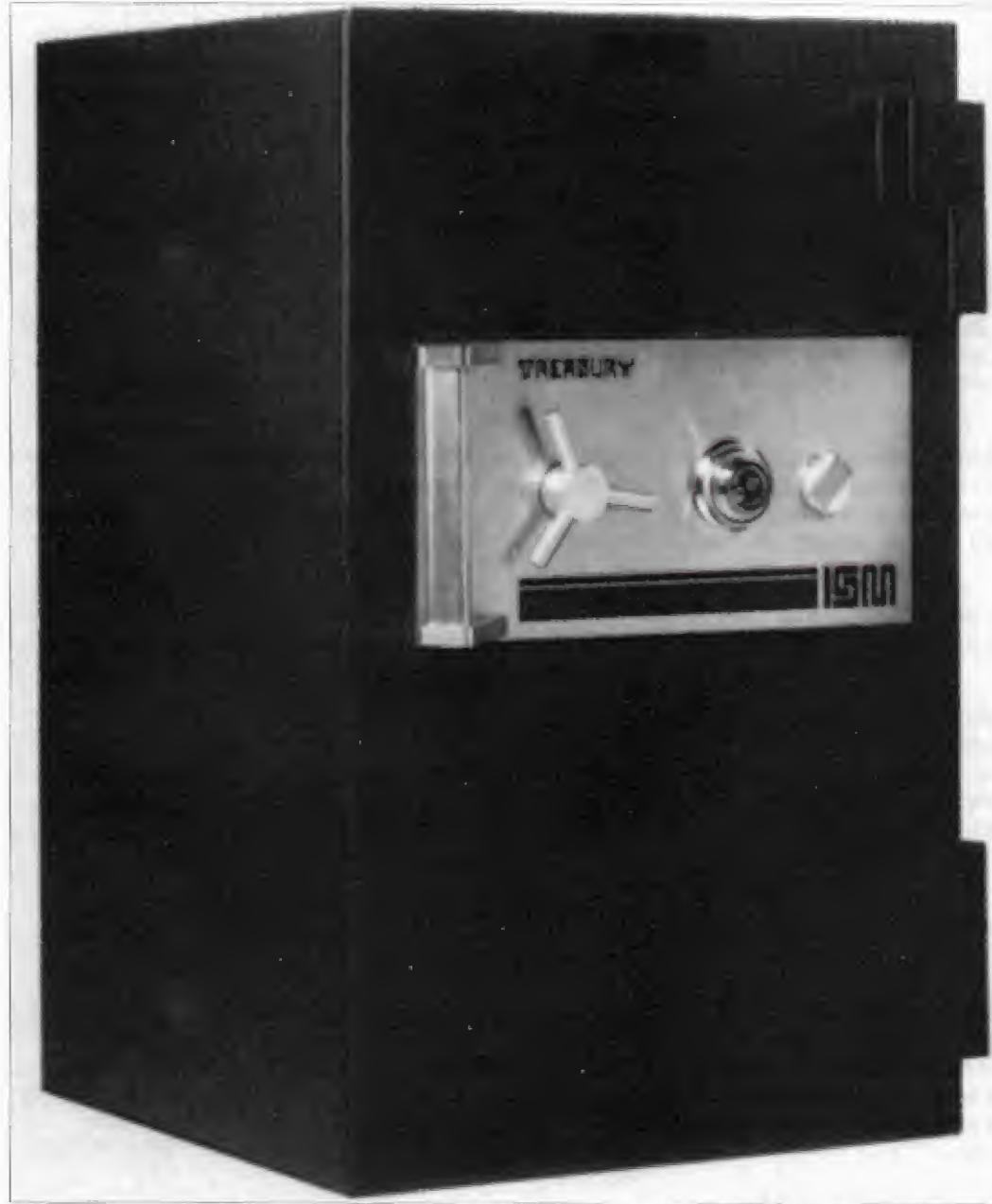
TL-15

Description: This is the minimum tool attack resistant test performed. It generally can withstand attacks from sledge hammers, wedges, chisels, punches, etc. It is mainly manufactured with plate steel that can be successfully compromised with oxyacetylene torches.

Recommendation: Use in areas of high environmental security for values not exceeding \$25,000.

TL-30

Description: This is the minimum security level accepted by most insurance companies in the jewelry industry today. Safes of this type need only have a door slightly more tool resistant than that of the TL-15. The body can be identical to the TL-15's 1" plate steel. The ISM line for example has two submissions for this security level. The Samson has a 4.5" door and 3.25" body filled with specially



2. An ISM Treasury TRTL-30X6 high security safe.



formulated composite concrete. Their CashVault has a 6" Alchronite door and 3" composite concrete body.

(Alchronite is ISM's patented drill and torch-resistant alloy.)

Recommendation: Plate steel TL-30's should be used much the same as the TL-15. Composite TL-30's can be used for values up to \$100,000, in medium to high security environments.

TL-30x6

Description: Since safes are far more likely to be attacked from the side, if exposed, this safe was developed to provide the same level of protection inherent in the TL-30 to all sides.

Recommendation: For use in protecting values to \$100,000 in low to medium security environments.

TRTL-15x6

Description: This security level was introduced in 1983 to provide for six sided protection against tools and torches. While the old TRTL-30 security level still exists, the x6 rating is more reflective of real world crime. Safes are far more likely to be attacked from the side, if exposed, than the front.

Recommendation: For use in protecting valuables over \$100,000 in low to medium security environments.

TRTL-30x6

Description: This security level extends the attack resistance of the TRTL-15x6. But even within this security classification there exist variations that provide more or less protection. ISM has three entrants in this line. The Treasury has a 7.5" door and 4.5" body, both with Alchronite. The Super Treasury has a 7.5" door and 5" body, both with Alchronite. The Diamond has a 7.5" Alchronite door and a 4.75" modified composite body with "tubes." All three ISM units are cast in one piece, and have increased security locking mechanisms with random glass secondary locking mechanisms.

Recommendation: For use in low to medium security environments with valuables in excess of \$500,000.

TXTL-60

Description: This safe type, provides the ultimate in security. Safes of this caliber are able to withstand explosive attacks as well as the tool and torch tests performed on the other safes. Nothing much can be added to this classification.

Recommendation: For those who need the confidence that they have the finest in security.

The following table is a guideline for making safe choices for your customers.

Labeled	Security	Value To Be Stored
TL-15,	very low	to \$25,000
TL-30,	low	to \$100,000
TL-30X6,	med-low	to \$100,000
TRTL-30,	med	over \$100,000
TRTL-15X6,	med-high	over \$100,000
TRTL-30X6	med-high	over \$500,000
TXTL-60	very high	over \$1,000,000

The ISM line is distributed in the US by S.P.C., a Volta Group Company, 315 Fairfield Rd., Fairfield NJ 07004, 201-808-1233, Fax (201) 882-6625.



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Cover
Feature

FROM TEACHER TO SAFEMAN

From teaching to safes. Making the best in a profitable field.

by Don Probasco

In 1978 Tim Flaherty was teaching general shop in school and also was teaching retarded children in a special education center. He liked what he was doing. He and his wife wanted children but did not think they could afford having them with his salary from teaching.

He watched a neighbor across the street coming and going at irregular times in his VW bug. Finally, out of curiosity, he asked him what kind of a job he had.

"I'm a locksmith" was his reply. "Why don't you ride with me and see what it is like?"

Tim rode with him and was very interested. Because of his interest the neighbor advised him to take a class from a correspondence school. Tim did, and his interest and knowledge began to grow.

He took a quarter-page ad in the yellow pages the following April. He worked after school from 2 PM until 7 PM. He soon found he was making more money locksmithing than teaching. In June he turned in his resignation to the school and became a full time locksmith.



by
Don Probasco

received compensation for her time and trouble and was allowed to remain at home with her children.

After a few years, Tim rented a warehouse for storage of lock inventory and safes. In 1983, he rented a store location and moved in. His business grew and flourished. A double wide space became open in the same shopping center, allowing him to double his capacity the following year.

During the Washington 1986 ALOA show, he visited the Mutual Safe Company booth. Later in the year, Mutual contacted him about warehousing safes for them and supplying them to locksmiths. Mutual had another office and warehouse in Springfield, Missouri, which served most other parts of the country.

The safes were and are manufactured in South Africa. They are then shipped to a port in Europe where they are transferred to another ship that then brings them to Port Everglades, Florida. Port Everglades is about eight miles from Tim's warehouse. When the container of safes arrives, Tim has to go to both the bank and the shipping lines to fill out paperwork and drafts. Each time is different, because the paperwork and drafts are seldom handled by the same bank. Occasionally, more than one bank will be involved in the transfer of money, with each charging a fee for its participation. Then the container must clear customs.

Sometimes, it is cleared quickly and sometimes it is held for as long as a week. After the container clears customs, it is put on a trailer and delivered to the warehouse.

Florida Mutual Safe Company supplies mostly to retail locksmith stores in Florida, although they have shipped products to locksmiths from Georgia to New England. Inventories are exchanged between each of the locations in Florida and Missouri.

Tim also sells these safes retail in his About Town Locksmith Store but does not cut prices in competition with other retail locksmiths. His warehouse is in a high population area, and he keeps it well stocked for immediate

delivery. His locksmith retailers can pick safes up from his warehouse, which cuts down on their cost of stocking the product. They may buy a small safe for display in their showroom and sell larger versions as a result.



1. Tim Flaherty teacher-turned-locksmith sells safes from his Florida location.

He worked mobile from his truck for five years. When he left home, he would forward his telephone to a neighbor. She answered the phone and made appointments for him. This worked well for both Tim and his neighbor. He preferred this to an answering service. While the neighbor



2. Part of business is properly displaying the product.

Tim offers delivery in a three-county area for a fee. The retailer can sell the safe, have Tim deliver it, collect from the customer, and never touch the safe. This appeals to many of Tim's locksmith customers. They know he will not undercut their prices or try to steal a sale.

When he started in business, Tim did subcontracting work on automobiles for one of the largest locksmiths in the area. Now he refers automotive work to other locksmiths.

"Price cutting between locksmiths is probably the greatest cause of their going out of business," Tim Said. "If a person can put himself in a field where the competition is less, then he can get the money he deserves.

"Most locksmiths are good technicians but are lacking in business ability." He says. "Yet, they will not sign up to take business classes. The public does not perceive a locksmith as a professional, as they would an electrician. We have built our business on the fair treatment of customers, dependability, and good equipment. Ninety percent of our business is either repeat or referral business."

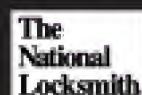
His advice to people getting into the safe selling business is really clean your store and spruce it up. Use more space in the front of the store for display and show merchandise in an attractive way. If you need more room, clean out the clutter in the back and move the walls back for more display area.

Flaherty is a member and past president of The South Florida Locksmiths Association as well as a member of ALOA.



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VANS - THE LOCKSMITH'S HOME ON WHEELS

A comfortable and efficient van requires proper layout and planning for the necessary work space.

by Tom Seroogy

Vans, the locksmith's mobile home. This really isn't so unrealistic, considering much of a locksmith's day is wrapped up in traveling from one customer to the next; cutting keys, pinning locks and making repairs on site; carrying every tool, manual and code book conceivable. All this for the convenience and satisfaction of the customer.

The amount of time we spend in our vehicles does not have to be unpleasant, however. Gone are the times when the van was a giant box filled with clanging hardware and tools, more reminiscent of a Sanford & Son delivery truck or a wagon load of gypsies and their wares.

Today's vans come equipped with modular shelving and storage areas for tools and materials; power sources for using AC and DC power tools off-site; and two-way radios, beepers and mobile phones for communication; Not to mention, of course, air-conditioning, AM/FM/Cassette/CD stereos with graphic equalizers that push a multitude of speakers both within and outside our range of hearing, and drive-thru restaurants.

No, vans aren't really all that bad if their purchase and use includes proper layout and planning for the necessary work space. This planning generally includes consideration in four categories: Interior shelving and cabinets, power sources, communications, and security.

Interior Shelving And Cabinets

Burrowing through stacked boxes and coffee cans to retrieve parts, tools and supplies not only gets old fast, but often leaves one wondering where they've all shifted to after every turn. Besides, an indiscriminate peek by a customer or passerby into a "scrambled" van destroys a locksmith's professional image and faith in this profession as guardians of security.

Installing work benches cabinets and shelves not only makes these

items more accessible, it also keeps the possibility of damaging delicate key cutting equipment to a minimum and makes for a more workable environment. Drawers keep tools organized and clean, cabinets are excellent for storing manuals and code books – the treasures of our trade.

There are several companies that can provide help in laying out your van interior and supplying and/or installing the needed accessories. In fact, Utilimaster Motor Corporation can provide an entire service vehicle fit to the locksmith's need.

Power Sources

Despite the best laid plans, it seems Murphy likes this problem best. You get to a job; plug your drill or equipment in and ... no power! Or, there's no outlet to be found. At this point we have three options, use an on-board power source, revert to the old pedal driven machines, or don't do the job.

Realizing the last two options aren't desirable or feasible, we can turn to power sources to generate the electricity we need to run our equipment.

Two means of power in the field include the van's battery or stand alone generators.

For those who want the convenience of operating off of the vehicle's battery, there are two options: Generator or inverter. Despite using different technologies to produce an AC voltage, the result of either method is virtually the same, although inverters tend to be more energy and space efficient and quieter than generators.

Stand alone generators are typically gas motor driven and must be run outdoors. For long periods of use, however, this may be the best and only alternative.

Communications

Cellular phones, beepers, two-way

radios and answering machines and services. Sometimes becoming the most frustrating aspect of a service business, these devices are currently the life line to the locksmith's profits.

From a large multi-vehicle shop to the one-man mobile locksmith, these devices are the umbilical cord to our business, and can be packaged to benefit both your customers' needs as well as yours.

When deciding on how and what to incorporate into your plan, set up a communication system that allows for repetitive back-up. If your cell-phone is not within range of a cell, you want to make sure your customer is transferred to a machine or service for answering, and that you can be beeped promptly to catch that call.

The cellular phone services in your area can offer varying packages to meet all your needs. Cellular One, for example, can offer you not only phone service, but beeper, phone mail and answering services as well.

Security

Remember to secure your vehicle. Coming out from a job site and finding your entire livelihood missing from the parking lot is an unhappy and often preventable occurrence.

Protect your vehicle both electronically and physically. Many van interior companies offer partitions and window guards. Add heavy duty hasps and padlocks, like those offered by American, Master and Federal, to the doors.

Consider purchasing an alarm system, even a simple one.

Remember, securing your van is a major step in job security!

Conclusion

Finally, remember your van is actually a tool. Take care of it. Use it properly. Make it comfortable and make it professional!

60 galvannealed steel (.5 mils of zinc coating) and Reading's exclusive Lectro-Life priming system. This system totally emerges the product in a vat of specially charged primer that gives 100 percent protection against rust and corrosion.



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POWER SUPPLIES

Power Star

PowerStar's UPG line of 700 and 1300 watt inverters are small, light, efficient and most importantly, silent. Small enough to mount under a bench or behind a seat yet powerful enough to run any key machine on the market. Complete with a low voltage alarm and automatic overload shutdown, they are the AC power source for all mobile locksmiths.



For more information and a Distributor near you call 800-645-4004.

Tripp Lite

Tripp Lite power inverters are perfect for mobile applications where AC power is needed. PowerVerter



Plus models provide the AC power necessary to start and run motors for key cutters and other mobile shop

equipment. PowerVerter supply clean, quiet AC power from 12 or 24 volt DC battery power.

For more Information Contact 312-755-5401.

The Lightning Charger

The Lightning Charger is a lightweight dual purpose generator designed to offer the greatest amount of power in the smallest amount of space. Designed primarily as an emergency battery booster, the Lightning Charger can quickly restore starting power to vehicles. It is also a 900 watt source of 115 Volt DC power, handy for operating most power tools and lights anytime, anywhere.



For more Information Contact 800-545-5348.

COMMUNICATION

Cellular One

Cellular communication is an essential tool for the mobile business person, including locksmiths. With a cellular phone customers can reach you immediately and receive an instant response. In emergencies, that can make the difference between the customer hiring you or calling your competitor.

Whether locked out of their car or worried about a home security system, customers look to a mobile locksmith to respond quickly. Cellular phones put customers directly in touch with the mobile locksmith, not an answering machine.

There are two types of cellular phones available for mobile users, and selecting the appropriate one depends on where conversations are most likely to take place. Cellular users may choose a mobile phone, which is permanently installed in a vehicle, or a portable phone, which can be carried in a pocket or toolbox and weighs from under six ounces to just over a pound.

Cellular phones typically operate on traditional analog systems. However, in some cities, cellular



customers also have the option of choosing digital service requiring a special, dual-mode phone to operate in both digital and analog systems. Digital customers enjoy increased call clarity, fewer dropped calls and enhanced call privacy at rates that are comparable, and sometimes lower, than analog.

When buying a cellular phone, watch for sales or promotions at a reputable dealer. Knowledgeable salespeople will help determine the type of phone, the cellular carrier and the air time package that best suit mobile business needs.

For more Information contact 800-762-3551.

Ericsson Communications Canada

Ericsson Communications Canada has introduced the world's smallest portable cellular telephones, the GE CT 700 and the Ericsson Micro Portable Flip Phone.

The GE CT 700 is an analog phone that measures 1.96" x 5.2" and weighs a mere 7.2 ounces. The Ericsson Micro Flip Phone measures 1.93" x 1.05" x 5.13" and weighs a mere 7.5 ounces. Both phones reflect



Ericsson's state-of-the-art technology and cellular leadership that had been shown in their digital product line thus far.

The GE CT 700 and the Ericsson Micro Portable are small enough to be placed easily in a shirt pocket or an evening bag, however, they contain a metal frame for durability.

As one of the world's smallest cellular telephones, it offers complete convenience and mobility. Besides the standard features such as speed dialing, 99 memory, alphanumeric nametagging, programmable pause and dual name capability, these phones also offer unique features such as credit card quick dial, ten secured memory locations and five scratchpad locations. A full line of accessories is also available which will offer the user additional features and convenience.

For more information in Canada contact 800-661-4201. In the U.S. contact 800-626-2000.

Kenwood Communications Two-Way Radios

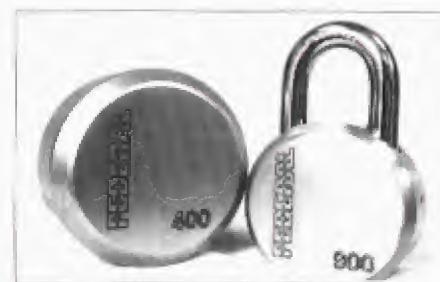
Two-way radios are a cost efficient way to keep critical lines of communications open to your drivers.



When situations on the job change, or immediate information needs to be relayed, mobile and portable two-way radios can provide an instant link. That means less down time waiting for drivers to find a pay phone. The results are increased productivity and improved customer satisfaction. And that means more business. For more information on how two-way radios can improve your business, contact Kenwood Communications at 800-950-5005.

SECURITY**Federal Lock #400 Padlock**

Federal Lock's #400 Shackless Round Padlock was designed for a variety of applications, and meets the most stringent security requirements



in the industry. The hardened steel body provides maximum protection against physical abuse, while its duplex nickel plating provides maximum resistance to environmental elements. The lock also has a rekeyable and changeable brass cylinder, with six specially designed mushroom pins, including a stainless steel top and bottom pin in the first chamber, to resist picking, drilling, and other unauthorized entries. Contact Federal at 800-682-9851.

Master Lock's Pro Series
Secure your vehicle with Master Lock's Pro Series padlock line.

The Pro Series padlock provides both high security and weather resistance. Its hardened boron alloy steel shackle provides twice the resistance to cutting as standard steel

Continued on page 86



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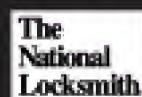
September 1994

**Las
Vegas**

The National Locksmith

INSIDE . . .

HOT
NEW
SECURITY
PRODUCTS



by

Tom Seroogy

FENCING IN MORE PROFITS

Once the territory of padlocks, fence locks have traditionally been ignored by the locksmith. But not any more!

How about a product that fills two needs – securing an otherwise hard to secure application and easy additional income through add-on sales. International Locking Devices

has provided just that.

Once the territory of padlocks, fence locks have traditionally been ignored by the locksmith. With a wave

of communities requiring higher security around pool areas, however, the need for reliable, user friendly fence locking has become law in many areas of the country.

Filling this need International Locking Devices introduces three different styles of fence locks. All of these locks are extremely easy to install using standard hand tools.

The least expensive of the units is the Push-Button Gate Latch. (See photograph 1.) At \$13.95 to the locksmith, this lock consists of the standard drop-in fork fence latch and a push-button lock on both sides of the lock.

To lock, simply drop the fork and push the button. To unlock, insert the specially designed barrel key into the lock and turn. A small notch in the key engages on a small peg or arm on the lock. Once the key is engaged, pull the button out. Despite its appearance, this is not a tubular lock.

The next, and probably the most locksmith oriented, lock is the Heavy Duty Double Cylinder Deadbolt Gate Lock for \$28.95. (See photograph 2.) This unit actually employs a keyed double deadbolt for keyed locking from both sides of the gate.

While the unit comes with a universal Kwikset keyway, with some modifications to a standard 2-3/8" bolt, other locksets may be used. This, of course, allows keying the unit to the customer's house, store or office keys.

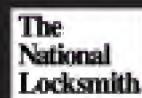
To lock, the fork must be in the down position. Turn the key to the locked position just like a normal double deadbolt. This allows the bolt to extend into position, blocking the fork from being lifted. To unlock, simply reverse the procedure.

The last model is the Automatic/Self Locking Gate Lock for

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1. The Push-Button Gate Lock.

\$49.95. (See photograph 3.) This lock is favored for and meets most community requirements for self-locking pool gate locks. Incorporating a pivoting fork, a key is used to release or unlock the unit for access/egress. Opening the gate, the fork pivots into position waiting for the gate to close. As the gate closes, the positioned fork straddles the stationary fence post and relocks when the gate has returned to the closed position.

The keys for this lock are modified barrel keys supplied by International Locking Devices. At this time, this lock does not allow for keying into existing keying systems.

Now, what does this mean to the locksmith? Quite simply, more opportunity. Locksmiths can now offer their customers easy, inexpensive keyed fence gate access/egress. The Push-Button and Double Deadbolt locks provide opportunity for the locksmith to supply a locking system for a customers' fence gates that are easier to use and weather better than other comparably priced locking methods.

The Automatic/Self Locking Gate Lock provides fast and effective pool safety compliant latches to existing pool gates for private residence as well as commercial and public entities.

Only a few measurements need to be known for ordering these locks:

Gate frame diameters are typically 1-3/8", 1-5/8" and 2". The 1-3/8" post is more common to the residential segment. The gate frame diameter will determine the size mounting bracket required for the lock. The Double Deadbolt lock is provided with brackets for all three diameters.

The diameter of the fence post determines what size fork is necessary. Fence post diameters will range from 1-3/8" to 3" depending on the installation.

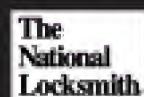


2. The Heavy Duty Double Deadbolt Gate Lock.



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electronic safe locking solutions.**

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3. The Automatic/Self Locking Gate Lock.

When installing the lock it is necessary that there be enough space between the fence gate frame and the fence post for the lock to fit. Accounting for the swing of the fork, a distance of approximately 2-3/4" is good. In some cases it may be necessary to loosen the gate hinges and adjust to get the correct distance. (See photograph 4.)

With the average installation time on any of these locks being roughly 15 minutes, this job is short and sweet by anyone's standard. Because these locks can be easily sold as add-ons

while performing other services like rekeying or deadbolt installation, the locksmith can look forward to an easy \$35 profit for every unit sold.

And as a locksmith, that sounds good to me.

For more information contact International Locking Devices at 800-863-9600.



4. Make sure there is enough room between the gate frame and the fence post.



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ON THE COVER

Door Control:
Installing
Securitron's New
TSB- 3 Touch
Sensor Bar.

PRODUCT SHOWCASE

LCD Electronic Directory By Sentex

Sentex Systems is pleased to announce the introduction of its new Infinity "M" series. This latest addition to the Infinity family of access control systems features an extremely large and very high contrast 2 line by 20 character display. This display is so large and bright that it can be read without any problems even by the elderly or others who have poor eyesight. The increased size and number of characters also make it even more useful as a prompting device during on-site programming.



Like the other members of the Infinity family of access control systems, the Infinity "M" integrates telephone, card, and keypad entry with an LCD electronic directory to display the occupant names and codes. These systems can control up to 32 doors via card or code access and can also perform elevator, HVAC and lighting control. A 2400 baud internal modem is standard and is used for programming and event record retrieval. The card technologies supported by the Infinity systems include Proximity, Wiegand, Barium Ferrite and ClikCard (Sentex's uniquely encode radio transmitters).

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Securitron's New Alarm System For Power Supplies

Securitron announces the PSM-12 and PSM-24 Power Supply Monitors. The PSM is an accessory product for regulated, battery charging power

supplies such as Securitron's BPS series. When connected to the power supply, the PSM provides monitoring of all power supply and battery functions. Correct voltage is



continuously monitored and a latching signal is given by lamp, Sonalert and dry relay if the voltage goes out of range.

The battery pack is given a load test automatically three times a day with local and remote signaling if the pack needs to be replaced. The PSM also signals any time the batteries have switched into the load that provides advance warning that the system will operate only for the backup duration of the battery pack. The PSM also effects a system disconnect when the batteries have operated the load to the point where their voltage is dropping rapidly. This saves the batteries from going into deep discharge and prevents the load from operating on a dangerous reduced voltage.

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***SRI and Steve Young are working
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The BLP Bar Lock Processor By ICI

Intelligent Controls Inc., the pioneer and leader in bar code based technology for use in Access Control and Automated Facilities Management Systems, has released the BLP 210/211 BarLock processor for full production. The BLP 210/211 is available for use with the AXxess 100 system controller and all BarLock bar code identification badge readers.

The BLP 210/211 BarLock processor combines state-of-the-art

access control technology with state-of-the-art fiber optic communications. The BLP 210/211 processor supports a direct fiber data bus network connection.

The BLP 210/211 BarLock processor is used to control one or two access points in a system configuration. Features include 100,000 uniquely coded cards per door, up to 34 supervised inputs, up to 16 relay outputs, easy installation, one or two door modes, anti-passback modes, battery backed up memory, and a wide variety of user

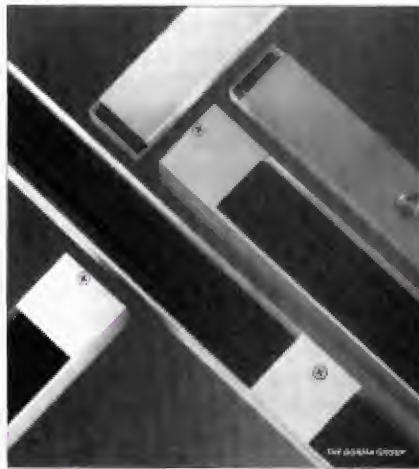


definable functions. The BLP 210/211 processor with AXxess software will interface with your alarm system for arming or disarming an alarm panel.

For **FREE** Information
Circle 251 on Rapid Reply

American Device Electromagnetic Lock Literature

New literature from American Device Manufacturing Co. presents



technical and ordering information on the complete line of U.L.-listed electromagnetic locks. The four-page brochure describes the 1,200-, 300- and 600-lb. holding-force locks in the line. Information is also provided on the company's line of access control products, including power supplies, key switches and other accessories.

For **FREE** Information
Circle 252 on Rapid Reply





by

Rick Segerstrom

DOOR DETECTION

Knowing whether a door is closed and locked is critical in a prison setting.

**PRISON
SECURITY**

In this article we are going to discuss some of the different ways to detect door position. This will lead up to the description of some products available just for that purpose.

In jails, it is very important to be able to tell if a door is closed and locked completely. For example, if you were standing inside a control booth, and looked at a door that was perhaps 60' away from you, could you tell if the lock was fully engaged, or would it be necessary for you to physically enter the area, cross over to the door, and visually verify that the door was fully closed and locked?

This is a scenario replayed over and over in some facilities every few minutes. Imagine if you had to personally verify the security of each and every door in a particular pod, every time you let a prisoner in or out of his cell. The time consumption alone wouldn't allow you to do anything else. It is for this reason and others, that several measures have been implemented into the lock design, as well as the door, that allows guards to verify on the console that a door is secured.

As you should recall, if you have been reading these articles, the guard has a control panel located inside his "office" or pod control booth, that allows him to electronically open all the doors in that pod. This allows the prisoners to come out, without having to carry a key to the door and opening it manually. Once a prisoner returns to his cell, the guard can tell if the door is fully closed and locked from his control panel. This is done through a light system. A red light indicates that the door is not secured, and a green light indicates a fully locked condition. Each door has a corresponding light. Usually,

the control console is laid out similar to the layout of the pod. This is, of course, for quicker visual orientation to the control console.

The simplest of door position indicators is probably the Magnetic Reed Switch. (Southern Steel part number 200 MRS) This is simply a normally closed circuit switch very similar to the contact switches used in several alarm applications on residences and businesses. With the door closed, a magnet located in one-half of the switch aligns with the other half drawing a reed switch to the closed position. When the door is opened, the reed switch is released, causing an open circuit condition. This is translated to the console and a red light indication is seen.

A more sophisticated position switch is the Southern Steel model 220. This switch is mounted above the

door in a protective casing. The switch is actuated by an actuator arm attached to the door itself. When the door closes, the actuator arm enters the protective casing and presses a microswitch located in the casing. This completes the circuit to give the appropriate light indication on the console.

I have given you this brief overview to allow you to understand the complexities of the problem, and the simplest solutions to this problem. Now let's factor in the human prisoner. Although not intelligent enough to not commit a crime in the first place, the prisoner is ingenious in devising ways to thwart the most complicated pieces of detention hardware.

As you are aware, a small magnet strategically placed, may be capable of giving a false door-secured indication, and any number of foreign objects placed into the path of the actuator arm can actuate the microswitch prior to the full closing of the door. Therefore, the lock manufacturers, who incidentally are smarter and better paid, have devised other ways to cross check to see if the door is fully closed and locked. These cross check devices are usually built into the lock itself, and may include two or more door position indicators working in conjunction with each other.

To expand a little, suppose you have a door, that is wired with only one door position switch. This door can be fully closed, thus giving a green light on the control console, yet it may still be unlocked! How is this possible you ask.

Well, imagine that this prisoner had filled up the strike receiver with paper. The door is closed fully, yet the



1. Doors and the locks in them contain various switches to assure that they are both closed and locked.

strike of the lock cannot extend into the receiver. This door gives a green light, yet it is not locked. The key here is closed and locked.

As I said earlier, the lock manufacturers have installed into their locks simple devices that indicate bolt extension. This is done with micro-switches attached to the bolt mechanism inside the locks. When the system is wired properly, a green light indication can only be achieved when the door position switch, and the internal bolt position switches, are in proper sequence. With this type of

setup, you can achieve total security over that door, knowing that the door is not only closed, but that the bolt is fully extended into the receiver. Then and only then, do you get a green light.

Lets look at the technicals on the magnetic reed switch first.

Size: 4-7/8" x 1-1/4" x 2-1/4"

Weight: One pound

This switch is used when a built-in door position switch is desired. This is a tamper proof unit, and is recessed into the door frame. An actuating

magnet is recessed into the door edge. Electrical requirements are 115 VAC, 60 HZ, Single phase.

220 Door position Switch.

Size (220L, large): 8-13/16" x 3-5/8" x 3-7/8" H

(220S, small): 8-13/16" x 3-5/8" x 2" H

Weight: (220L) 8 pounds

(220S) 7 pounds

Casing: 10 gauge galvanized steel

This position switch is designed to be mounted on the door frame above the top hinge. The pivoting actuator is mounted to the door with special security fasteners. The 220L has a sloped top, while the smaller 220S is rectangular. The 220S is frequently used on doors with smaller (2") door frames. Both units are designed to work on doors with both 4 1/2" and 5" hinges. Electrical requirements: 115 VAC, 60HZ, single phase.

In servicing any door where the position switches are not giving the proper indications, first check for the simplest things. Foreign objects in the path, or in the areas that prevent the switch from fully closing. Next check the adjustments. Sometimes, the repeated slamming of the door throws the adjustments out of alignment. Finally, check the voltages for proper readings. Most of the time, the fix is simple and requires little or no disassembly of the lock case. If all else fails, disassemble the lock case and check the internal switches of the door lock. I have had to replace very few internal switches. Most of the time, it was adjustment only. Remember, these locks are built TOUGH, they were designed to be resistant to almost everything an inmate can do to them.



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Police response to reported crimes varied by the type of crime that had occurred. Police came to the victim in 70% of violent crimes, 51% of thefts, and 68% of household crimes, for instance. Police were more likely to respond to a violent or household crime than to a theft.

BUSINESS BRIEFS

News from the Locksmithing Industry

INDUSTRY INTERVIEW...

This month we had opportunity to speak with James Donegan, Vice President of Sales and Marketing for Master Lock Company. Donegan joined the Master Lock Company in 1989 as director of sales, and was quickly promoted to vice president of sales in 1990. He was promoted to his current position in 1992.

As VP of Sales and Marketing, Donegan is responsible for strategic planning, product management and marketing for Master Lock's core business product lines, including padlocks and door hardware. He is also responsible for developing sales strategies and promotions within the U.S. for Master Lock.

Under Donegan's direction, Master Lock introduced three handlesets with a new Durashine™ finish and the High Security, Weather Tough™ Pro Series™ line of commercial padlocks.

Prior to joining Master Lock, Donegan worked for Black & Decker, Inc.; joining them in 1984 as sales manager-western region and being promoted to manager-national accounts for U.S. Household Products-Business Group in 1987. In that role, he initiated retail marketing programs.

Asked what challenges the locksmith industry faces, Donegan points out four concerns:

Distribution compression is the first. Fifteen years ago there were more than 325 hardware wholesalers, today the number is less than 175. Manufacturers are facing fewer outlets for their products and locksmiths have fewer sources for ordering products. In addition, many wholesalers have instituted minimum order levels, making it difficult for locksmiths to maintain varied inventories.

"Increased competition is another concern," points out Donegan. "Locksmiths are facing competition from inside and outside the industry, including specialty retailers, home centers, mass merchandisers, manufacturers who sell direct, and electrical contractors who do not want locksmiths to install electronic security systems.

"We are seeing specialty retailers and home centers offering some traditional locksmith services that keep consumers out of locksmith shops. And, if locksmiths try



James Donegan
**Vice President of Sales
and Marketing**
Master Lock Company

to compete with the mass merchandisers on prices, it is virtually impossible for locksmiths to maintain acceptable margins of profit on product sales."

Donegan also sees electrical contractors working very diligently to promote their expertise concerning security systems, including agendas that promote laws preventing locksmiths from installing electronic security systems.

Thirdly, Donegan points out an eroding consumer image of the locksmith.

"Some consumers see locksmiths as technicians and not as security business professionals," says Donegan. "The consumers' perceptions of locksmiths as quality sources for security have been in a decline as other sources have arrived. As a result, many consumers are not consulting with their local locksmiths when making security decisions and purchases."

Finally, there is new technology. It is a challenge for locksmiths to remain technically advanced to keep up with consumer demands for "step-up" security products offered by manufacturers. Locksmiths are facing many challenges to keep pace with technology, competition and changing consumer expectations.

Along with the challenges facing the locksmith, Donegan also sees much opportunity.

First and foremost, he points out the growing trend of mega-security.

"Consumers are concerned about crime and interested in products to protect their homes and families. As the baby-boomers continue to age, they are becoming increasingly concerned about security," said Donegan.

In addition, with dual-income families, the need to protect empty homes and children who stay at home alone for part of the day, is growing rapidly.

Added-value security products also pose areas of opportunity. Manufacturers are introducing higher-security products aimed at meeting consumers' needs. Higher-security products often provide increased margins for locksmiths. In addition, retail outlets often do not have the technical expertise needed to help consumers understand the product benefits or to help consumers install products.

...INDUSTRY INTERVIEW

Convenience is another issue locksmiths can turn into opportunity. According to Donegan, consumers are accustomed to "one-stop shopping" and want one source to help select, install and service integrated systems.

Adding to the opportunities, Donegan points out a very clear picture of what it is going to take to remain successful at locksmithing.

"Opportunities abound for locksmiths, provided they are ready to meet the challenges of the security industry," he states.

According to Donegan, a successful locksmith understands security systems and is able to assist consumers in designing and installing their systems. Consumers want home security information and retail outlets typically cannot provide the technical information they desire. By providing knowledgeable security advice, locksmiths can build in repeat sales.

In addition, most retail outlets do not provide installation, so the consumer must either install it themselves or hire an outside contractor to perform the work. Successful locksmiths will promote their ability to help consumers select, purchase and install security products.

Donegan also sees strong marketing techniques as being characteristic of a successful locksmith.

"As the marketplace becomes more competitive, locksmiths must aggressively promote their expertise to consumers," said Donegan. "Successful locksmiths will use advertising, publicity, yellow pages, direct mail and other techniques to make consumers and small businesses aware of their services."

Hosting security seminars or offering to appear on local radio and television talk shows to discuss crime prevention techniques are good ways to promote your services, he said.

In addition, locksmiths should make regular sales calls on local businesses. Offer to conduct a free

security evaluation and show business owners areas where they may want to consider enhancing security. Bring samples of new security products and explain the advantages of using these products.

Offering technical advice builds the locksmith's image as a security expert and will often lead to sales. More importantly, businesses and consumers will begin turning to you when they have security questions.

A successful locksmith will use the shop and/or van to sell. Attractive signage can help gain consumers' attention and draw them into the shop, says Donegan. Signs on the sides of vans are advertising to everyone they pass.

Well-stocked shelves and impactful displays that highlight specials or new products can also help move product. Also, if a consumer becomes interested in a product that you do not have in stock, they may be very likely to buy it from a retailer down the street.

"Successful locksmiths do not compete on price," says Donegan. "Rather, locksmiths sell their security expertise."

When a homeowner comes in to purchase a deadbolt, the successful locksmith takes the time to explain why a higher-security deadbolt is worth a few extra dollars. If a business owner has a problem with theft, the successful locksmith will help the owner develop a program to minimize theft that may include the installation of additional security products.

Again, the successful locksmith takes advantage of technical knowledge and the ability to install and service products, adds Donegan.

Finally, Donegan holds a very positive outlook on the future.

With the interest in crime prevention and the new technologies and products being developed by manufacturers, the market for value-added security products is very strong. Locksmiths who are willing to change their businesses and aggressively sell their technical expertise have a bright future.



CCL Security Products a division of the Eastern Company of Naugatuck, CT, has acquired the Padlock Product Line of **Prestolock Inc.** of Paramus, NJ, a major manufacturer of luggage locks and padlocks.

All inquiries regarding either Prestolock by CCL or other CCL Security Products should be directed to James T. Salonia, National Sales and Marketing Manager, CCL Products, 199 Whiting St., New Britain, CT 06051. Phone 800-216-0082, or fax 203-223-7601.

Security Lock Distributors is expanding again. Last year they extended their hours to meet the needs of customers. Now, after a tremendous response to both the later hours and the technical assistance group, Security is adding more experts to answer questions.

Security Lock Distributors' technical staff will be available between 8 AM and 7 PM, Monday through Thursday, and 8 AM till 5 PM on Fridays.

For more information, call or write Security Lock Distributors, 59 Wexford Street, Needham Heights, MA 02194. Or call 800-847-5625, Fax 800-878-6400.

Proprietary Controls Systems Corporation (PCSC), has announced that **Doug Stiles** has joined the PCSC Sales/Marketing team as Western Regional Sales Manager. Stiles brings with him 10 years of commercial real estate, 5 years of commercial security and 8 years of access control experience. He will be managing all sales and support for the LiNC-NET line and assisting in the management of the Eclipse line of access control products.



Shop the
Product Guide.
on pages 61-67
of this issue.

LIGHTER SIDE

I Heard That!

I think I'm in the wrong business," a friend of ours said laughingly to Don, recently. The two men had just returned from pulling a locksmith service call up-river; it was the first time Ben had accompanied Don on such a jaunt. "I don't know when I've had such fun! Are all your service calls like that?"

"No," Don replied soberly. "Some get to be downright hilarious."

After receiving the call to get a set of keys out of the locked trunk of an '87 Pontiac, Don had jumped into his van to head 25 miles north to a river camp where the stranded motorists were waiting. We were visiting Ben and his wife at the time, having forwarded our calls to their home telephone, so Ben volunteered to go along for the ride, to keep Don company.

When the call had come in, there had been the business of the customer trying to decide whether to have Don come at all. Although she said the keys were locked inside the trunk and she had no way of getting in, she had balked at his price, which included time and mileage for the trip up in addition to his regular trunk-opening charge. Back and forth she went in her thinking, back and forth. Twice, she had hung up to think about it, then called back — long distance — with more questions. This is often not a good sign, we have learned. Finally, she said, "Come on." When asked, she assured Don she had the money to pay him; she just hated to part with it.

By the time the two men reached the site, a small crowd of friends and relatives had gathered, lending moral support — but very little else — to the perturbed woman.



by
Sara Probasco

Ben stood aside while Don surveyed the situation. The trunk operated from an electronic push-button lock inside the locked glove box, so he elected to open the vehicle and "hot wire" the trunk opener by means of his handy, jim-dandy little "light cord jumper cables."

While attempting to gain entry to the vehicle by opening the locked passenger door, Don set off the alarm system — a usual occurrence in vehicles so equipped, but it had come as a surprise to Don that this poorly kept, older-model vehicle had been outfitted with an alarm system. As the squalling went on and on, more and more curious on-lookers gathered about to give their suggestions and comments on the matter.

Finally, Don managed to work his magic, and the trunk sprang open, to the amusement and amazement of both Ben and the delighted audience.

The woman dived into the contents of the cluttered trunk, pawing through this and that in her search for the keys she knew were there.

No luck.

"Now what am I gonna do?" she wailed.

Just then, her daughter ambled up, bouncing an infant in her arms.

"What's going on, Momma?" she asked.

The older woman told her about locking the keys in the trunk, calling Don to come, and then not finding the keys there, after all.

"Do you mean that ring of keys with the red whistle on it?" the daughter asked. "It's right here, in my diaper bag. You dropped it in there when you were giving Billy his bottle at breakfast. Remember?" Reaching into the diaper bag, she retrieved the missing keys and handed them to her mother.

"Man oh man, was that woman unhappy," Ben chortled later. "She had to pay Don all that money for coming up there and getting her trunk open, for nothing. She was fuming at her daughter, and Don, and everybody, except herself. I'll never forget the image of her slapping those bills in Don's hand, one at a time, while she was cussing out everybody for miles around."

"She better be glad her daughter came up with those keys when she did. She was about to have the added expense of a set of keys from scratch, and that does get into money!"

"Do you have many jobs like that, where a whole new set has to be made?" Ben asked, wiping the tears of laughter from his eyes.

"All summer long. People won't believe how the river can pull keys out of swim-suit pockets. I never will forget one group of guys who had come up for the day and lost their keys in the river. When they called, they said, 'Do you know any place within walking distance, up here, that sells beer? We sure are thirsty.' I had to tell them, they were in a dry county. Then they asked if I could bring them a six-pack and let them put it on their Visa with the service call charges. They sure were glad to see me."

"The funny thing about them was, they had the idea I went scuba diving in the river to retrieve lost keys."

Ben hit the side of his head. "You know, my ears are still ringing from that alarm. I don't know how you could work with all that noise going on."

"It helps to be a little deaf," Don admitted. "I just turn my bad ear in that direction and tune it out."

"I didn't know you had a hearing problem," Ben said. "When did that come about?"

"Not long after I started working on cars with alarm systems."



THRU THE KEYHOLE



A Peek at Movers & Shakers in the Industry

**ATTENTION MANUFACTURERS
AND DISTRIBUTORS:** Would you like
your company and products to be
profiled in *Thru The Keyhole*? Please call
Managing Editor, Tom Seroogy at
(708) 837-2044.

Colorado Locksmith College

Colorado Locksmith College is located in Westminster, Colorado at the base of the beautiful Rocky Mountains. Their programs boast "Hands-On at its Best." For one lesson or one subject they offer a one day or one week course. Custom designed to the particular need of the customer, it assures the personal touch. This program is offered once a month by appointment only.

Colorado Locksmith College offers a three month Basic Locksmith Course, that exposes the student to 240 hours of hands on locksmith training. Convinced that hands-on is the best way to learn a trade the school offers no correspondence classes. All Instructors are accredited by the Department of Higher Education. They have been serving the United States since 1986 the Basic Locksmith Classes start monthly.

Colorado Locksmith College also has a six week Fundamental course consisting of 120 hours of locksmith training and exposure. This program is comprised of the first half of the Basic Locksmith program. Both of these programs are approved and regulated by The Colorado Department of Higher Education. The Fundamental classes are by appointment only. The school also assists in lodging when requested.

For more information contact Colorado Locksmith College, Inc., 4991 W. 80th Ave., #103, Westminster, CO 80030. Phone 303-427-7773.



Janet Mirku, President and CEO of JLM Wholesale

JLM Wholesale Is A Three-Time Winner

JLM Wholesale, Inc. has been ranked 73 among the state's fastest-growing companies in the annual 1994 Michigan Private 100 study. This is the third year in a row that the company made the prestigious list. In 1992 they came in ninth and last year the 41st spot. President and CEO Janet Mirku has her eye on making it again next year.

Celebrating its 10th anniversary this fall, this multi-award-winning company is among the top five of its kind in the nation. Mirku attributes

the rapid growth of her company to years of experience in the industry and especially to 14 motivated, well-trained and well-informed employees who work together as a team.

The Michigan 100 honor is reserved for companies that have shown consistent improvement over a five-year period. They must have had net sales of at least \$100,000 in 1989 and fiscal 1993 sales of at least \$1 million.

With a limited business background, a lot of determination and hard work, Mirku learned to market the business step-by-step. Starting out in the basement of her home, she recently moved into the company's brand new 12,000-square-foot facility overlooking wooded hills in Oxford, Michigan, a city 50 miles north of Detroit.

Mirku and her dedicated team have built a customer list of more than 3,000 from all over the United States. They include locksmiths, companies that install security systems, glass doors and card access systems. JLM also services companies that specialize in the installation of door openers and door security systems.

JLM Wholesale, owned and run by Mirku, is the only women-owned door hardware distributorship in the U.S. It distributes high-quality door hardware and maintains an extensive inventory from nine manufacturers. They offer technical door hardware counseling and also can customize standard hardware to meet the unique electronic specifications of a customer's order.

To contact JLM phone 800-522-2940 or fax 800-782-1160.

New Software Resale Market For Locksmiths

As is the case with most technically growing industries, locksmiths must keep up with constant changes, improvements and advancements. New products are flooding the marketplace, each possessing its own angle on future profits. How can you choose which to bring in and which to avoid?

One of the best method's of deciding on products you wish to promote is to look at other industries

and there respective success stories.

Computers were once viewed by locksmiths, and others, as necessary evils. Now the computer is mandatory to continued company growth and productivity. Although many locksmiths do not personally operate computers, most successful shops have someone entering information and updating records on a daily basis.

Software is the heart of any computer system. Without it, the computer is rather useless. Software programs are now available for locksmiths to resell to commercial customers. Most resale programs are "key control" related since key control is best accomplished by companies internally rather than by locksmiths keeping track of every key transaction.

Selling software is one of the most lucrative businesses in the world. Microsoft Corporation has proven that for years. So, why can't locksmiths take advantage of some of these profits? No Reason!

As professional security advisors and consultants, locksmiths are at the fore front when it comes to physical security and key control. Recommendations to your customers result in sales of security products and service on a daily basis.

Taking a closer look at profits from software sales shows 60 percent to 200 percent potential profit margins selling computer software. The best part is that the software companies typically provide all technical support eliminating the need to know every aspect of a program in order to sell it.

Software is just one of the new and exciting areas that locksmiths can now venture into with proven profit potential. Many products are entering the security marketplace but few offer the profit history that software has enjoyed.

For more information on key control software contact Security Control Systems at 815-469-0532.



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TECHNITIPS

*Helpful hints
from
fellow locksmiths*

**Send in your
tips and win.**



by
Jake Jakubowski

HOW TO ENTER

Simply send in your tip about how to do any aspect of locksmithing.

Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: Jake Jakubowski, *Technitips Editor, The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107. Remember, tips submitted to other industry publications will not be eligible. So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1994? Enter today! It's easier than you think.

BEST TIP OF THE MONTH

If your tip is chosen as the best tip of the month, you'll win \$50 in cash! Plus, you may win one of the large year end prizes!

EVERY TIP PUBLISHED WINS

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, every tip published will win a copy of the Technitip Handbook.

These Prizes Awarded Each Month!

- All-Lock A 7000 VATS Decoder
- HPC Pistolpick
- Silca Rubberhead Keyblanks (100 Blanks)
- ESP PR-13 Professional Lock Pick Set
- Sieveking Products EZ-Pull GM Wheel Puller
- Technitips Handbook

Submit your tip and win!

September's Best Tip

Recycled Deadbolt Hole

Like any locksmith that installs deadbolts or knobsets, I wind up with quite a few plugs from cutting the 2-1/8" cross bore hole whenever I have to prep a wooden door. Normally, I just throw them into my tool box and when I clean my tool box out, I throw them away.

Until it recently occurred to me that these plugs would make excellent shims to keep hollow metal doors from collapsing when I install a deadbolt or knobset and the door does not have factory mounting holes.

These cross bore plugs measure just under 2-1/8" in diameter and are usually 1-3/4" inches thick. (See illustration 1.) To use them for shims I first enlarge the 1/4" pilot bit hole to a full 1". Then, I sand the thickness of the plug to 1-1/2" to fit inside the door. The next step is to cut the plug exactly in half. (See illustration 2.)

To use the shim, I insert it in the door with the half-moon cutout facing the back of the lock. I insert the lockset, tighten the screws until the skin of the door snugs up against the shim and I'm finished.

The shims are free, they work and help prevent call backs due to loosening locksets. By thinning them down a little more, I've found they work as well for knobsets, and are excellent for shimming mobile home doors too.

Randy Fremert,
New Mexico

Illustration 1

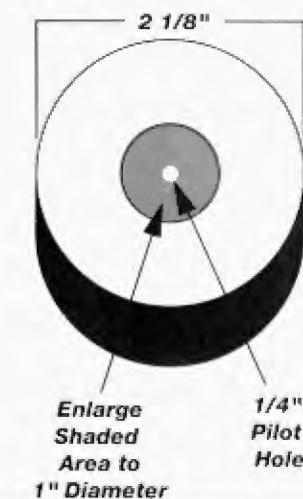
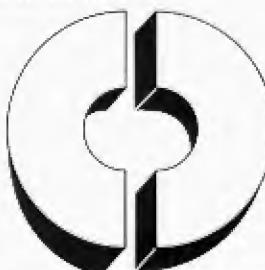


Illustration 2



All-Lock Vats Decoder Winner
BMW Progression

The other day, I was called out to originate a set of keys for a 1979 BMW. Not having worked on this model before, I checked all the info I could before leaving the shop. Nothing I found gave me reason to believe this would be different than any other foreign car job.

When I got to the car, I found that the passenger side door lock was missing (so much for a code number there) and if there was a code number on the driver's side door, it had either been obliterated, or I couldn't find it. Since I could not find a code to cut the door/ignition key by, I set the lock aside and went to the trunk.

After examining the door lock I realized it is constructed in such a way that on one side of the plug, the wafers are clearly visible and by inserting an uncut key, I could read the cuts on the eight wafers in the door lock. That left me to determine cuts 9 and 10 for the ignition.

I tried impressioning the last two cuts without success. Then I set down and began to examine the HB series codes to see if I could detect a pattern in the bitting. The one thing I noticed was that a 4-1 or 1-4 cut did not show up.

With that information, I was able to develop the following progression chart that allowed me to find the 9 and 10 cuts and finish the job:

First Key	Second Key	Third Key
1-1	2-1	1-3
1-2	3-1	2-4
2-2	3-2	
2-3	4-2	

3-3
3-4
4-4

Just remember that the key must be cut on both sides as you progression for this lock.

Jeff Staples,
Arkansas

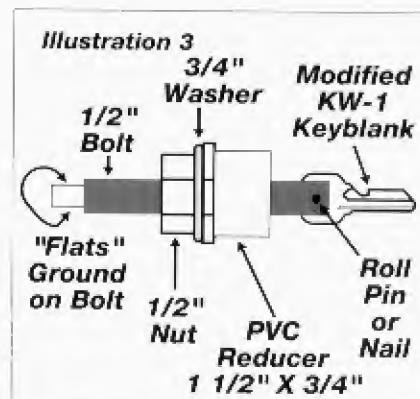
HPC Pistol Pick Winner
Cylinder Extractor

Since 1984, I have used my own, homemade puller to remove Kwikset cylinders from knobsets without doing any damage. Here's how you can make one for just a few dollars and a little bit of time.

First obtain a 1/2" bolt about 5" long. Cut the head off of the bolt, just under the head. Then, cut a slot about 1" deep and wide enough to accept the head of a KW-1 key. Next drill a 1/8" hole to receive a nail, a screw or a roll pin. Modify a KW-1 key blank as shown in illustration three, insert the key in the slot and put the retaining pin in the 1/8" hole.

Use a 1-1/2" x 3/4" PVC reducer as the base of your puller and insert the bolt, washer and nut as shown in the illustration. Grind the threaded end of the bolt square (or flat on two sides) so you can hold it with a wrench to keep it from turning.

Now, insert the modified key in the cylinder you want to pull, slide the PVC reducer (the reducer will not mar the cylinder) into place. Snug the nut and washer against the reducer and you're ready to pull the cylinder. Simply use one wrench to hold the bolt and another to tighten the nut



until the cylinder releases from the knobset.

Lee Whitford,
California

Silca Rubberhead Key Blanks Winner
Ford Ignition Modification

I had to replace a 1991 Ford van ignition that had been damaged. It was 10:30 at night and the customer wanted to get the van off the street. Unfortunately, I did not have an All-Lock 1406 which the truck required.

I was about to remove the old ignition, start the van with a screwdriver so the customer could get the van off the street and come back the next morning with the proper ignition switch for the vehicle.

After removing the old ignition, I compared it with an All-Lock 1407 that I had on my truck. The only difference that I could see was the buzzer unit. I decided to see if I could re-engineer the 1407.

I cut the piece of copper off where the pigtail is attached and then trimmed back the plastic on both sides to match the #1406 buzzer unit. (See Illustration 4.)

Bingo! It worked fine! Buzzer and all.

Donald DeFreitas
Illinois

Editor's Note: The only difference between these two locks is the buzzer switch. If the original switch has not been damaged, simply swap it to the new lock.

ESP Lock Pick Set Winner
Easy Probe Light Holder

I have had a problem holding my door inspection light (HPC's FAI-15)

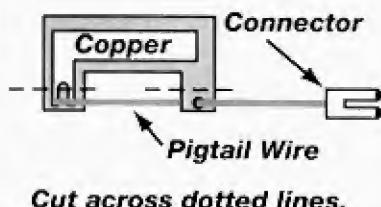


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Tools, Door Guards,
and Key Cabinets

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Illustration 4

1407 Buzzer Unit



and manipulating a door tool at the same time when trying to open a locked vehicle.

To correct the problem, I purchased a few easily obtainable items and made a light holder that attaches to the car's window. My shopping list was comprised of two small suction cups, a tube of SuperGlue Gel and a roll of adhesive backed Velcro.

First, I attached a 3" strip of Velcro length-wise on the handle of the inspection light. Then, I cut two small circles of Velcro (approximately 1/2" in diameter) and SuperGlued them to the back of each suction cup. I use two suction cups in order to increase the holding power of my holder and to give me better directional control.

By placing the suction cups approximately 2" apart on the window, I can secure the light at any angle I choose. And, both of my hands are free to manipulate my tools.

Robert Jones,
North Carolina

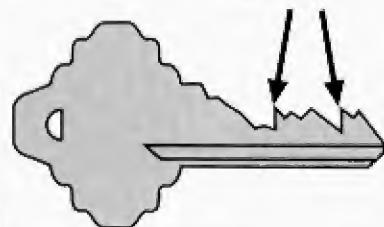
GM Wheel Puller Winner

Thumb Turn Conversion

Here is a fast, simple, effective and easily reversible method of converting any standard mortise cylinder into a thumb turn.

Illustration 5

Straight depth cuts prevent key from being removed.



Take the proper key blank, and duplicate your customer's key on it. Then select one or two cuts to file a perpendicular notch into that will trap the pin in that position. (See illustration 5.)

By filing this notch in the blade of the key, you prevent the key from being removed from the mortise cylinder. And, since a key is now readily available to everyone in the building, that cylinder will comply with Life Safety Codes.

This is a quick-fix when you find yourself short of thumb turns.

Glenn Starling,
Florida

Technitip Handbook Winner
IC Core Modification

I combine a lot of Best (and Best-type) cores. I find that the close tolerance of the chambers make a snug fit for some of the pins. I have found this to be especially true of #4 pins. They are often the most tedious to fit.

I found that if the tops of the chambers are reamed just a slight bit, the mid-size pins fall in much easier. (See illustration 6.) To accomplish this, I use a drive pin (a 3" RamSet nail), chucked into my drill press. A very slight pressure tapers the upper portion of the chambers to enhance pinning without effecting the capping process.

Jack Roberts,
Indiana

Locksmith Bucks Winners

Automatic Center Punch

For over twenty years and in many different applications, I have used an Automatic Center Punch. This tool should be in every locksmith's toolbox and can be purchased for under \$20.

Originally designed to make marks on sheet metal, you will find that you can bury a pesky finishing nail (it's a snap!) you run across while installing deadbolts. You can use it to secure retainer clips like on the GM side bar locks. You can use it to back out one way screws and remove roll pins.

It's a great screw starter. Just place it on the spot you want and snap it twice to get the screw started. Or, you can punch your screw hole in sheet

**Drive Pin:
Mounted
In Drill
Press To
Taper Mouth
Of Barrel**

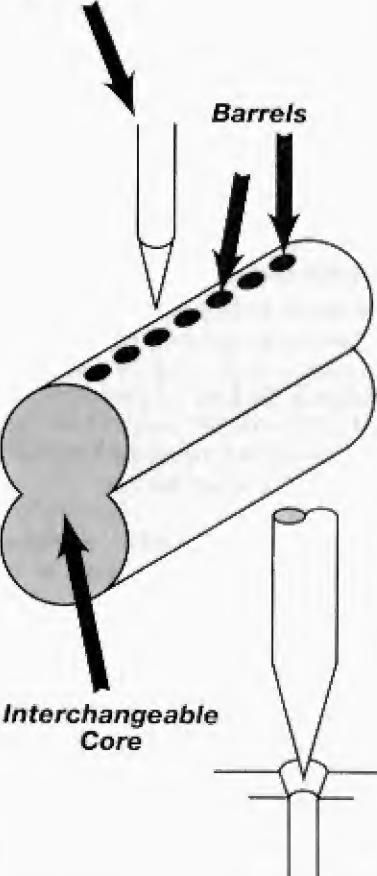


Illustration 6

metal by simply snapping the punch in the same spot until it penetrates the metal.

By buying an additional head for Your Automatic Center Punch, and grinding it down to a chisel configuration, you can use the ACP to stake retainers, remove burrs and do dozens of other tasks nearly everyday!

I really like this fantastic little tool. I know you will too! So go get one for your tool box. Even though it can't cook an omelet - it can crack the eggs!

David Hamby,
Georgia

Editor's Note: I have received several tips regarding automatic center punches over the last few months. Then, when I got this one from Dave, I decided to buy one and see what all the fuss was about. Like Dave, I'm now a

confirmed, dyed-in-the-wool, Automatic Center Punch Fan. My ACP goes everywhere my toolbox goes!

GM Code Tab Removing

Here is a really simple way to remove the code tabs from General Motors keys.

Just grab the tab with a pair of face cap removal pliers and twist. The tab will pop right out without the use of a hammer or vise. And it only takes a second or two.

Rick Kimmer,
South Carolina

Antenna Car Openers

If you're looking for stock to make your own car opening tools, try car antennas. You should have no problem in finding a automotive junk yard that will let you collect the antennas off cars that are scheduled to be crushed or scrapped.

You will find the solid, one-piece antennas work fine for most of the tools you can make. Some of the antennas are tapered, while others are the same diameter their entire length.

The top piece of expandable antennas work fine for those smaller

tools that are used through the keyway of the door locks.

I find that when bending the antennas, they handle better if I use a small propane torch to heat them where I'm going to bend them. Just remember to remove your hot new tool from the vise with a pair of pliers and dip it into a pan of cold water before handling them!

Len Wagner,
Illinois

Card Display

I attach a small piece of double sided tape to the back of my business cards. Then, I suggest to the customer that they affix the card to their refrigerator or some prominent location. This keeps my name in front of them and gives me repeat business.

Also, I suggest that when you're having cards printed, spend the extra ten bucks or so to have a nice, sharp card printed. It will pay in the long-run. Just think about the cards you keep. The nice ones go in a desk file and the others go to File Thirteen!

Ron Ryder
Nevada

Saving Stripped Threads

Every now and again, you can find yourself in the position of having to restore stripped threads on something you're working on. Frequently, you find that for various reasons you cannot just drill the hole to the next size up and re-tap it.

Recently, I had that happen to me and my first thought was to use HeliCoil Thread Inserts. I soon found out that this would not be cost effective since I would need to purchase a special tap and insert tool.

While looking at other options, I found that the HeliCoil people also make a product called Sav-A-Thread. These inserts do not require special tools, drills or taps and they are priced right.

You can find Sav-A-Threads at any good machine shop supply store. Hope this helps someone else like it helped me.

M. Avena,
New York



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BITS & PIECES

Informative Tidbits for the Security Industry

Original equipment keyblanks and a service kit for Saturn are now available from All-Lock distributors. All-Lock keyblank 94ST is the original equip plastic headed key with the Saturn logo. This key fits all Saturn models from 1990 through 1994.

The All-Lock Saturn service kit, A-6000, includes caps, springs, tumblers, gaskets, return springs, pawls, retaining pins and rod retainers for all Satellites from 1990 to 1995. All-Lock is currently the OEM supplier of Saturn locks.

For more information contact an All-Lock distributor.

If locksmiths won't do it someone else will. A recent Commonwealth of Virginia memorandum to locksmiths offering services in Virginia, informed locksmiths that the Virginia General Assembly has passed a resolution requesting the Board of Professional and Occupational Regulation to do a study on the need for regulating and licensing locksmiths in that state.

According to the memorandum, locksmiths were asked to complete and return a survey. The reason?

"Your opinions are important to the Board in gathering information about the need for state regulation of this occupation," said the letter.

Since the advent of the Alpha Technologies ignition (used on the 1991 to 1994 Cavalier and 1992 to 1993 Grand Am, Skylark and Achieva), locksmiths have been wrestling with methods, techniques and tools to make keys for them without removing or dismantling the beast.



by
Tom Seroogy

In the September 1993 issue of *The National Locksmith* we introduced the AlphaCracker depth finding tool by Saber Tool Company. Since then tryout keys by Baxter and Aero and the Alpha-Tech Tool by H.E. Mitchell have come into play. All of these tools work well (see Dale Libby's review on some of these tools on page 8 of this issue), but are limited by the lock's design of the 2 and 3 depth tumblers. (See the "Five Minute Cavalier Ignition," *The National Locksmith*, Sept. 1993, page 23, for more details on this problem and use of the AlphaCracker depth finder.)

Because there is very little discernible difference between the reading of the 2 and the 3 depth (often referred to as the 2/3 depth), it is necessary for the locksmith to either impression or progression these cuts on the key. To aid in the progression of these cuts, Blackhawk Products has released the "Alpha 2/3 Progression Charts" manual. The manual is a listing of all the possible key progressions for the 2/3 depths.

Once the cuts on a key have been determined using one of the tools, the locksmith refers to the proper list of bittings in the manual to progress the final 2/3 depths on the key. Except in a few cases, less than six blanks are needed to complete a key.

For more information on this manual and related tools, contact:

- Blackhawk Products at 303-882-7191.
- AlphaCracker by Saber Tool, call Allied Locksmith Supply at 800-247-8217.
- Alpha-Tech Tool by H.E. Mitchell, call 503-236-9444.
- TO-55 tryout keys by Aero, call 800-627-9433.
- Baxter tryout keys by Baxter, call a Baxter distributor.

As an addendum to the Alpha Technologies ignition: I continually get calls complaining that keys cut for this lock do not work, even when they

have been cut to dealer and roadside assistance supplied codes. The reason?

According to the manufacturers of code cutting equipment, the tolerances of the lock itself are so questionable that even keys cut by code may not work well or at all (even dealers are declining to cut these keys or guarantee their operation). This is not the fault of any decoding tool, the cutting equipment or the locksmith. It is simply a characteristic of the lock; an innate feature with which we must work.

For the best results, use a HPC 1200 or Framon style code cutter to "laser" cut the key. If using a punch style code cutter, file the cut angles off the key to yield that "laser" cut appearance. Cutting the key in this manner almost doubles the flat on which the tumbler lies and, in most cases, makes up for the poor tolerances of the lock.

Kent-Moore has just recently released the new J35628-95 VATS/PASS Keyway Adapter. (At right.) This attachment is to be used with their VATS Interrogator for interrogation of the new GM G-Car



(Aurora/Riviera) using the new GM 10-cut key with VATS. For pricing, availability or more information, contact Kent-Moore at 29784 Little Mack, Roseville, MI 48066-2298, Phone 800-345-2233 or FAX 800-578-7376.





by

Jake Jakubowski

...AND YOU SING WELL, TOO!

Just one item can dramatically improve your customer's security and put extra profits in your pocket.

I know there are a lot of things I can be accused of being. However, being a traditionalist is definitely not one of them.

I mean, I've written articles on installing doors, hinges and other products that a purist might not consider as being locksmithing in the traditional sense of the word. I have been so bold (some might say, "Bubble headed") to suggest that a locksmith can have a profitable working relationship with the police, the local hardware store and, Yeal Verily, even the dastardly (Oh! Bite my tongue!) home center!

I've written suggestions for beginning locksmiths who are struggling to get their businesses started, that included cutting keys at the local flea market on week-ends, to successfully bidding against the "Big Dawgs" for high-dollar, high-profit business that a lot of folks in this business think is an area where the little guys or beginners should "stay on the po'ch."

I've written about the "potential blank check" that the Americans With Disabilities Act has given each of us in the locksmithing industry. With the only requirement on our part being a

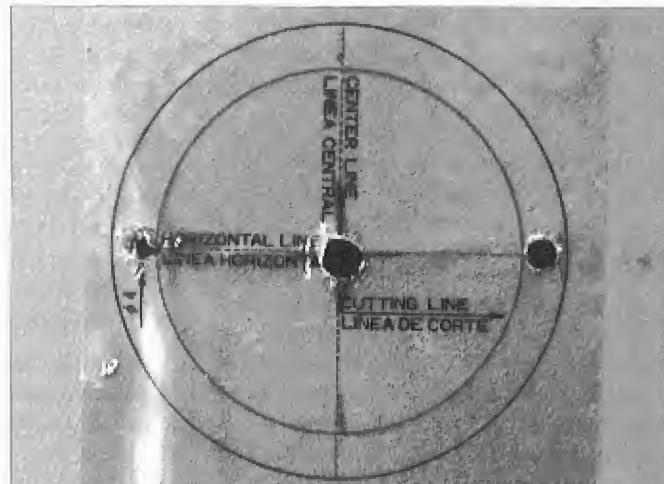
necessity to familiarize ourselves with the mandates of the act as they apply to our industry.

And, I've written about suggestive selling (Oh! There's that nasty seven letter word again: S-E-L-L-I-N-G.) otherwise known as: The-Art-Of-Pointing-Out-To The-Customer-That-They-Need-Something-Else-While-You're-There-To-Rekey-The Door!

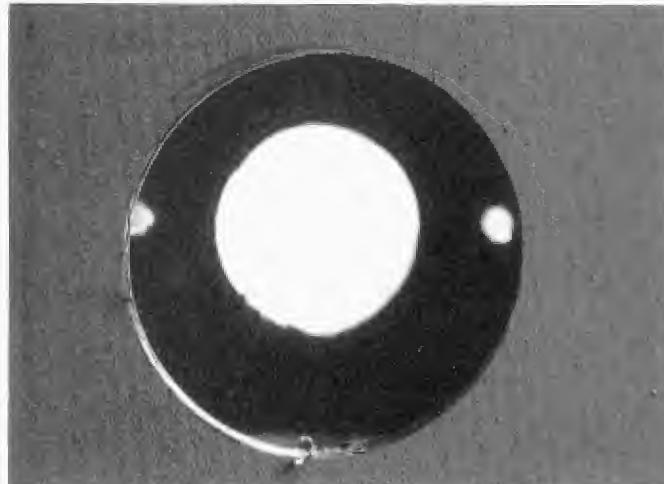
Throughout it all, I've tried to show beginners and established shops alike, ways they can easily carry extra shekels home each week. Some of what I've written has drawn compliments from my readers. And,



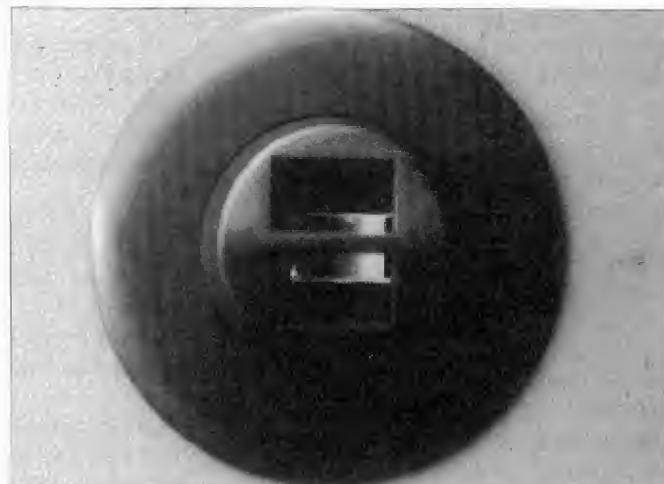
1. A view through the DoorScope.



2. Applying the cutting template to the door.



3. The holes cut and ready for a new viewer.



4. The viewer installed.

some comments I've received have been less than complimentary.

A fellow named Elbert Hubbard once said that if you wanted to make money, you'd have to find a need and fill it. In my best non-traditional manner, I'm going to try and improve your outlook on alternative services with a view of profits you're sure to find eye opening.

In fact, \$50 gross profit for less than a half an hour's installation time is not unrealistic! Scout's honor! All you have to do is show your customer how one item can dramatically improve their security and you're likely to see extra profits in your pocket.

At the same time, I'm going to show you how, by suggesting to your customer that they are required by law to comply with ADA mandates, you are going to push them into allowing you to pull more profits out of your service call to them. And, if your customer doesn't want to be pushed into complying, I'll show you how to use a little leverage to get what you want. Regardless of what the customer originally called you to do.

Would, let's say, an extra sale that could increase your gross profit by at least \$100 bucks interest you? What if I told you, you could earn that much money by spending an extra hour, or an hour and a half on a job you are already working on.

All you need to do, is say to your customer: "Say, did you know...?" And then point out to them what needs to be done. Is that simple? Or, is that simple? Believe me, it's really that simple.

Come on, I'll prove it to you by showing you how I sold the jobs, what the products cost, how long it took to install them and then ... let you factor in your service call, mark up percentage and installation fees. You can actually see how much money you can make without doing the job.

I'll tell you where to look for this kind of business, how to successfully solicit this kind of business and how one customer not only wanted me to do his location, but asked me to do thirty-nine others! If I'm lyin', I'm dyin'! All because I said: "Gord, do you know what you really need on that back door?"

Okay. First things, first. What are these fantastic products I've found that can give your customers a better outlook on security and let you push your customer into allowing you to pull more profits from the jobs that you do?

The first product is called a DoorScope. Now, the DoorScope is not just another peephole. The DoorScope, in my opinion, is a practical answer for the customer who wants something better than a standard viewer, but doesn't want to spend the money for an electronic video/communicator like the Aiphone MY5-1CD ("Seein' Through Doors", *The National Locksmith*, May, 1994).

minutes on a steel door! First, find the vertical center line of the door and then measure up about 55" from the bottom of the door. Apply the template supplied (it's sticky-backed) and drill a 1/4" pilot hole (completely through the door) in the center and two 3/16" holes (through the outer skin only) where indicated.

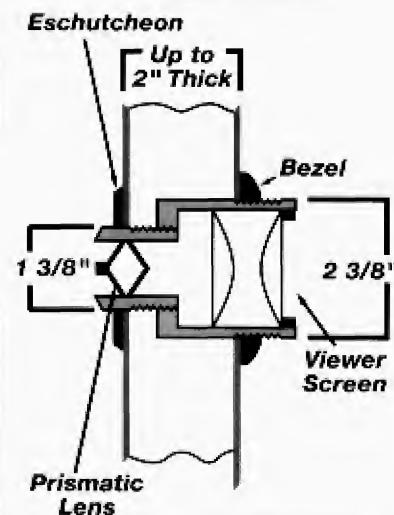
If the door already has a standard viewer on it, remove the viewer and place your template for the DoorScope so that the red (inside) ring on the template covers the upper part of the viewer hole. Even though the 1-3/8" exterior hole will not take out the old viewer hole, the outside escutcheon will cover it.

Now, cut out the exterior hole with a 1-3/8" hole saw, and the interior with a 2-3/8" hole saw. Clean out any insulation and you're ready to mount the DoorScope. Place the lens in the escutcheon and mount the escutcheon in the two 3/16" holes. Next, thread the bezel over the viewer housing, thread the viewer to the back of the lens and tighten the bezel against the door. You just completed your DoorScope installation! (See illustration 5.)

I buy my DoorScopes from New Outlook Products, 31 Fulton Dr., New Fairfield, CT 06812 (203-746-7695). I pay \$41.95 (plus shipping) for each. I won't tell you how much I charge for them or how much I install them for but, I will tell you that every one I install puts over \$50 in my pocket! Use the cost that I showed you, add your normal markup, installation charges (if any) and your service call fee. How much would you clear on a DoorScope installation?

How hard are they to sell? If your customer does not have a window or electronic surveillance on their back door, all you have to do is show them the view a DoorScope would give them and tell them you can install it while you're there to rekey the same door. Could you use an extra \$50.00 in profits?

If you think we can stop our easy profit making right here you're wrong and you're right. Wrong, because there's plenty more to show. Right, because I'll cover those with you next month.



5. Cut-away view of the DoorScope assembly.

Photograph one is the actual view through a DoorScope that I installed. The neat thing about the DoorScope is that you can see out the viewer from as far as 6' to 8' just as easily as you can when up close to the door. That sure beats having to put your eye up to the hole on a regular viewer and getting a "fish-eye" view of the outside.

Photograph two shows the template used by this viewer. Photograph three, is a view from the inside of the door showing the 2-3/8" interior hole, the 1-3/8" exterior hole and the two 3/16" holes that prevent the exterior escutcheon from turning. Photograph four shows the completed installation from the outside.

How difficult is the DoorScope to install? Not very. My average installation time is less than 15



KEY CODES

1994 GM Codes

JA00-JP99

HPC 1200 CM

Code Card - CF215

Cutter - CW1011

Stop - 1064R Tip Stop (Ford 10-Cut)

Framon

Cut start - .216"

Cut to cut: -.092", Spacing Block #3

Cutter - FC6445

Key Clamping - Lay spacing clip

F2MS552 flat on left side of vice and align from tip.

Curtis

Cam - GM6

Carriage - GM6A

KEY BLANKS

B&S 5995936

Silca GM87(EP)

Curtis B82

Ico P1102

Jet 882IPH

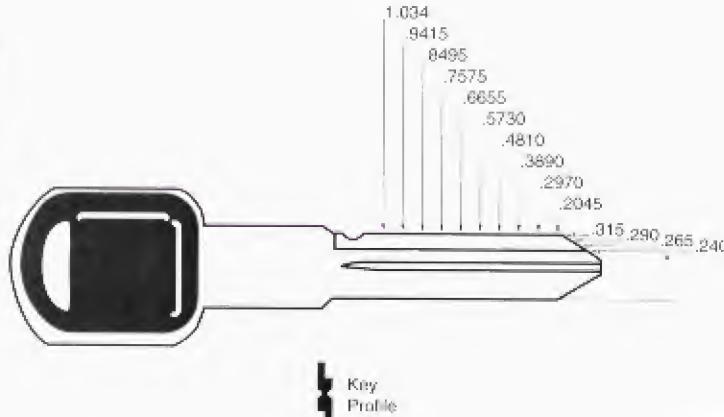
EZ B82

ESP B82

Spacing and Depths using
Universal Micrometer
Card #58.

	Spacing	Depth
1	.1850	.315
2	.2775	.290
3	.3700	.265
4	.4625	.240
5	.5550	
6	.6475	
7	.7400	
8	.8325	
9	.9250	
10	1.0175	

The new 1994 GM code series includes 405 pages of over 100,000 active codes. GM, however, is not using all of the codes in any given year and the codes are being picked at random. To better serve the locksmith, over the next few months *The National Locksmith* is printing only those codes that have been confirmed to be in use on this year's GM vehicles. If you have a code that is not included, you can get the bitting by calling us at (708) 837-2044.



JA00	1342334243	JA32	1342434233	JA64	1342111332
JA01	1342113223	JA33	1343223112	JA65	1342221334
JA02	1342332112	JA34	1343242212	JA66	1342113133
JA03	1342322324	JA35	1342242324	JA67	1342421233
JA04	1342344232	JA36	1343213233	JA68	1342323312
JA05	1342213113	JA37	1343233113	JA69	1342232343
JA06	1342213434	JA38	1342131343	JA70	1342443232
JA07	1342423244	JA39	134231312	JA71	1343243224
JA08	134213422	JA40	1342113442	JA72	134213342
JA09	1342423423	JA41	1343112442	JA73	1343123113
JA10	1343113443	JA42	1342433244	JA74	1342123234
JA11	1342134323	JA43	1342234223	JA75	1342132434
JA12	134213244	JA44	1343223234	JA76	134434312
JA13	1342431243	JA45	1343244234	JA77	1342231344
JA14	1343132124	JA46	1342312334	JA78	1342232422
JA15	134243123	JA47	1342322124	JA79	1342312333
JA16	1342442342	JA48	1342124323	JA80	1342232434
JA17	1342131322	JA49	1342332432	JA81	1343124434
JA18	1342122343	JA50	1342324242	JA82	1342332442
JA19	1343423244	JA51	1342134342	JA83	1343311524
JA20	1343113224	JA52	1343311242	JA84	134434323
JA21	1343223124	JA53	1342421132	JA85	1342134344
JA22	1343233444	JA54	1342322433	JA86	1343224422
JA23	1342421323	JA55	1342122342	JA87	1344343242
JA24	1342421333	JA56	1342133422	JA88	1342442433
JA25	1343242423	JA57	1343113424	JA89	1343213423
JA26	1342133432	JA58	1342332342	JA90	1342133123
JA27	1343422124	JA59	1342334342	JA91	1342243442
JA28	1342432444	JA60	1343312433	JA92	1342212323
JA29	1343122313	JA61	1342344223	JA93	1342233113
JA30	1342213423	JA62	1342113422	JA94	1342242112
JA31	1343423224	JA63	1343213132	JA95	1343211324

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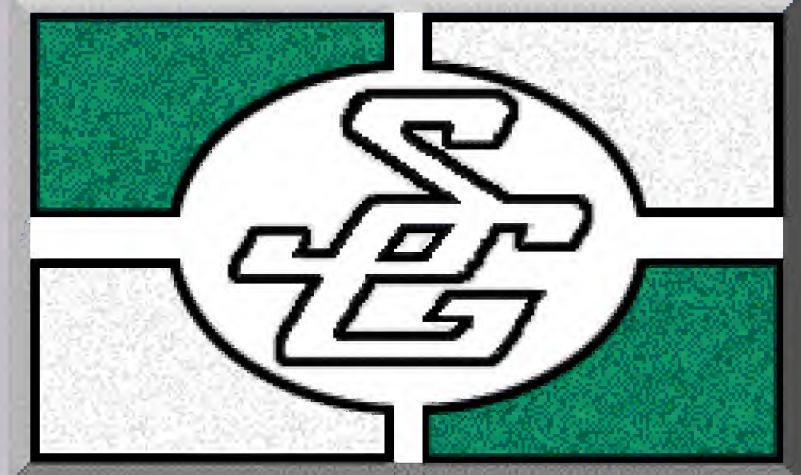
www.laserkey.com



1994 GM Codes

JA00-JP99

JA96	1342422344	JB24	1343232422	JB32	1342322113	JB80	1342124213	JC08	1342342433	JC36	1342422443
JA97	1343131133	JB25	1343322133	JB33	1343324432	JB81	1342442333	JC09	1342442324	JC37	1342242244
JA98	1342313422	JB26	1342133134	JB34	1343344212	JB82	1342424433	JC10	1343132134	JC38	1343221224
JA99	1343242312	JB27	1343312442	JB35	1343234432	JB83	1342422312	JC11	1342421342	JC39	1342213342
JB00	1343223113	JB28	1343342234	JB36	1343312213	JB84	1342312213	JC12	1342424234	JC40	1342343312
JB01	1343124233	JB29	1343324212	JB37	1342423133	JB85	1342212312	JC13	1342132433	JC41	1342442312
JB02	1343234233	JB30	1342121224	JB38	1342443113	JB86	1343423134	JC14	1342124234	JC42	1342342313
JB03	1343212244	JB31	1342244233	JB39	1343321343	JB87	1343242344	JC15	1342334424	JC43	1343224234
JB04	1342113344	JB32	1342331322	JB40	1334433243	JB88	1342244234	JC16	1343132122	JC44	1343121213
JB05	1343322434	JB33	1343244224	JB41	1342313233	JB89	1343121243	JC17	1342321244	JC45	1343313212
JB06	1343243222	JB34	1343423112	JB42	1343221323	JB90	1343223224	JC18	1342134313	JC46	1342342233
JB07	1343244232	JB35	1343423324	JB43	1343321213	JB91	1343112123	JC19	1343212123	JC47	1343134213
JB08	1343211213	JB36	1342434244	JB44	1343122344	JB92	1342324213	JC20	1342423422	JC48	1342324334
JB09	1343342124	JB37	1343121332	JB45	1342334312	JB93	1343231223	JC21	1342131132	JC49	1343122343
JB10	1343344222	JB38	1342113243	JB46	1342233122	JB94	1342443222	JC22	1343121123	JC50	1342234244
JB11	1343232134	JB39	1342232344	JB47	1342121334	JB95	1344434342	JC23	1343112324	JC51	1342434313
JB12	1342421242	JB40	1342424242	JB48	1342312422	JB96	1343342134	JC24	1342122334	JC52	1343124344
JB13	1343342322	JB41	1342134434	JB49	1343312424	JB97	1343211313	JC25	1343312324	JC53	1343344324
JB14	1343121312	JB42	1343234423	JB50	1343124212	JB98	1342213323	JC26	1343232343	JC54	1342422134
JB15	1343112433	JB43	1343132423	JB51	1342343423	JB99	1342232324	JC27	1342343123	JC55	1342313323
JB16	1343421133	JB44	1343244322	JB52	1343323124	JC00	1342323213	JC28	1342432432	JC56	1343242324
JB17	1342121324	JB45	1343322424	JB53	1342433212	JC01	1343123124	JC29	1342131342	JC57	1343212423
JB18	1342312234	JB46	1342433423	JB54	1343321344	JC02	1343312113	JC30	1342331223	JC58	1342322444
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JB20	1343242242	JB48	1343423124	JB56	1342243133	JC04	1343321312	JC32	1343421323	JC60	1342123133
JB21	1342231312	JB49	1343344323	JB57	1342424212	JC05	1343213122	JC33	1343323422	JC61	1342342342
JB22	1343113322	JB50	1342133122	JB58	1343123242	JC06	1342342423	JC34	1342343132	JC62	1342432123
JB23	1343132342	JB51	1342231222	JB59	1343231342	JC07	1343422324	JC35	1343134324	JC63	1342423213



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JC64 1342321312	JC92 1343422344	JD20 1342243222	JD48 1343124234
JC65 1342213123	JC93 1343113233	JD21 1342234243	JD49 1343212432
JC66 1342434324	JC94 1342342123	JD22 1342243432	JD50 1343211342
JC67 1343124343	JC95 1343122434	JD23 1343112213	JD51 1342124343
JC68 1342344224	JC96 1343234244	JD24 1343124424	JD52 1342242122
JC69 1334433424	JC97 1342334432	JD25 1342231134	JD53 1342242433
JC70 1343131243	JC98 1342122132	JD26 1343423243	JD54 1342233112
JC71 1342242343	JC99 1343322444	JD27 1342334222	JD55 1343112312
JC72 1342443233	JD00 1343124333	JD28 1343213442	JD56 1342334213
JC73 1342322343	JD01 1343231233	JD29 1342131133	JD57 1343223442
JC74 1343231324	JD02 1343324242	JD30 1342123312	JD58 1342232444
JC75 1343322312	JD03 1342242124	JD31 1342112434	JD59 1342134233
JC76 1342342232	JD04 1342344212	JD32 1342321123	JD60 1343244324
JC77 1342311332	JD05 1342342434	JD33 1342234423	JD61 1343313123
JC78 1342232112	JD06 1342211224	JD34 1342134222	JD62 134233123
JC79 1342211213	JD07 1343243123	JD35 1342424343	JD63 1342123132
JC80 1342323244	JD08 1342431222	JD36 1342313424	JD64 1342132133
JC81 1342242313	JD09 1342442242	JD37 1342112324	JD65 1343132312
JC82 1343213232	JD10 1342242113	JD38 1343131324	JD66 1342242242
JC83 1343342424	JD11 1343123324	JD39 1342211332	JD67 1342123443
JC84 1342123424	JD12 1343233423	JD40 1343244342	JD68 1343213444
JC85 1334433422	JD13 1342332243	JD41 1342321344	JD69 1343421312
JC86 1342443223	JD14 1343221232	JD42 1343313424	JD70 1343211242
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JC89 1343211322	JD17 1342131123	JD45 1342242134	JD73 1342344222
JC90 1342234344	JD18 1342331132	JD46 1343423312	JD74 1343133213
JC91 1343223422	JD19 1342331223	JD47 1342443423	JD75 1342113432

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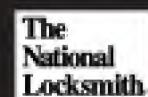
1994 GM Codes JA00-JP99

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JD79	1334434318	JE07	1343313223	JE35	1342424424	JE63	1343133123	JE91	1342443344	JF19	1343422444
JD80	1342434342	JE08	1342423123	JE36	1342423132	JE64	1342434422	JE92	1342242132	JF20	1342343434
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JD82	1342134244	JE10	1343422433	JE38	1342243234	JE66	1343244243	JE94	1343134233	JF22	1342334434
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JD89	1342313132	JE17	1334433444	JE45	1343022423	JE73	1342342133	JE01	1342213224	JF29	1342113424
JD90	1342313344	JE18	1343423123	JE46	1342432242	JE74	1342242422	JE02	1342211233	JF30	1343121322
JD91	1343342433	JE19	1342113433	JE47	1343121132	JE75	1343213113	JE03	1342213124	JF31	1343113342
JD92	1343322442	JE20	1343343123	JE48	1343242112	JE76	1343242333	JE04	1342443313	JF32	1343131244
JD93	1343323212	JE21	1343242343	JE49	1342123134	JE77	1342213244	JE05	1343223242	JF33	1343234312
JD94	1343123213	JE22	1343224232	JE50	1343323123	JE78	1343132123	JE06	1342113312	JF34	1342212133
JD95	1343223312	JE23	1342232442	JE51	1342134422	JE79	1342423224	JE07	1342313243	JF35	1342431312
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JD99	1343421132	JE27	1343133244	JE55	1342442243	JE83	1342132242	JE11	1342211334	JF39	1343232113
JE00	1342423122	JE28	1343134342	JE56	1343122132	JE84	1343233422	JE12	1342123132	JF40	1343113432
JE01	1342332234	JE29	1342213134	JE57	1342322313	JE85	1342321343	JE13	1342424332	JF41	1343243312
JE02	1342231242	JE30	1343421134	JE58	1342423432	JE86	1342124313	JE14	1342431244	JF42	1342322342
JE03	1342442244	JE31	1342423212	JE59	1343131124	JE87	1342323433	JE15	1342433124	JF43	1343242134



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1994 GM Codes JA00-JP99

JF44	1342421213	JF72	1342432434	JG00	1342334212	JG28	1343124224	JG56	1343131223	JG84	1342113443
JF45	1342122424	JF73	1343243243	JG01	1343131132	JG29	1342332434	JG57	1343123443	JG85	1343221233
JF46	1342343432	JF74	1342132443	JG02	1342321313	JG30	1342328243	JG58	1343243424	JG86	1342331224
JF47	1342313124	JF75	1342342124	JG03	1342334322	JG31	1343422312	JG59	1343342244	JG87	1343233213
JF48	1343423212	JF76	1342123344	JG04	1343223244	JG32	1342124342	JG60	1334434233	JG88	1334434222
JF49	1343124223	JF77	1343312124	JG05	1342313444	JG33	1342233224	JG61	1343324433	JG89	1342431344
JF50	1343343222	JF78	1342124433	JG06	1342332423	JG34	1342133242	JG62	1342123224	JG90	1342331213
JF51	1342211243	JF79	1342112432	JG07	1343124244	JG35	1342424322	JG63	1343422343	JG91	1342442123
JF52	1342122443	JF80	1342213133	JG08	1342232234	JG36	1342442332	JG64	1342342312	JG92	1334434224
JF53	1342131222	JF81	1343421242	JG09	1343113222	JG37	1343423423	JG65	1343343113	JG93	1342132124
JF54	1343132324	JF82	1342332343	JG10	1342321333	JG38	1342232242	JG66	1343231232	JG94	1342442234
JF55	1343321124	JF83	1343421322	JG11	1342232443	JG39	1342112123	JG67	1342343234	JG95	1342311243
JF56	1342431313	JF84	1343423132	JG12	1342332124	JG40	1342112134	JG68	1342113313	JG96	1343312432
JF57	1342242424	JF85	1343242122	JG13	1342324242	JG41	13423242243	JG69	1343423234	JG97	1343244334
JF58	1342231122	JF86	1342112124	JG14	1342433132	JG42	1342343424	JG70	1343132113	JG98	1342243223
JF59	1343212322	JF87	1342133234	JG15	1342311224	JG43	1343123132	JG71	1343213313	JG99	1342424312
JF60	1342243224	JF88	1334433442	JG16	1343321322	JG44	1342433234	JG72	1343224332	JH00	1342113242
JF61	1334433244	JF89	1343113444	JG17	1342433432	JG45	1342311322	JG73	1343342432	JH01	1343134244
JF62	1342324234	JF90	134221243	JG18	1342212244	JG46	1342424333	JG74	1343134224	JH02	1343243244
JF63	1343212213	JF91	1342331312	JG19	1343313443	JG47	1343113122	JG75	1334434424	JH03	1343312312
JF64	1343242433	JF92	1342424432	JG20	1343231132	JG48	1343231313	JG76	1343131222	JH04	1334433242
JF65	1342313133	JF93	1342232313	JG21	1342234213	JG49	1343132234	JG77	1342312444	JH05	1342324323
JF66	1343134312	JF94	1342421322	JG22	1342132334	JG50	1342344312	JG78	1342243112	JH06	1342211333
JF67	1342431242	JF95	1343133224	JG23	1342332422	JG51	1343121124	JG79	1343232132	JH07	1342134242
JF68	1343211334	JF96	1343242323	JG24	1343342342	JG52	1342123423	JG80	1342432324	JH08	1343233244
JF69	1342122324	JF97	134232243	JG25	1343311232	JG53	1343324423	JG81	1343133113	JH09	134213222
JF70	1342243422	JF98	1343132424	JG26	1342244222	JG54	1343234242	JG82	1342234312	JH10	1343421324
JF71	1342431122	JF99	1343242113	JG27	1343211232	JG55	1342244243	JG83	1342321213	JH11	1343131224



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JH12	1334434244	JH40	1342423424	JH68	1342132442	JH96	1342113132	JJ24	1342331323	JJ52	1343321233
JH13	1342343233	JH41	1342232213	JH69	1342121342	JH97	1343223433	JJ25	1342133442	JJ53	1342443242
JH14	1342313244	JH42	1342132213	JH70	1342313224	JH98	1342233134	JJ26	1342334242	JJ54	1343343242
JH15	1342131243	JH43	1342421313	JH71	1342442434	JH99	1343234422	JJ27	1342323133	JJ55	1342433112
JH16	1342443434	JH44	1343121242	JH72	1342313433	JJ00	1342342343	JJ28	134223215	JJ56	1343313113
JH17	1342324333	JH45	1343231123	JH73	1342443243	JJ01	1342433434	JJ29	1342122453	JJ57	1343232244
JH18	1343213343	JH46	1342431123	JH74	1343212323	JJ02	1342443112	JJ30	1342443422	JJ58	1343342243
JH19	1342231323	JH47	1343123224	JH75	1342122442	JJ03	1342342442	JJ31	1342424313	JJ59	1342423113
JH20	1343321313	JH48	1343233212	JH76	1343321242	JJ04	1342323444	JJ32	1342122344	JJ60	1343123434
JH21	1342242213	JH49	1342342244	JH77	1343224344	JJ05	1342343243	JJ33	1342343313	JJ61	1342244322
JH22	1343134424	JH50	1343124312	JH78	1343342113	JJ06	1342432244	JJ34	134242332	JJ62	1342331344
JH23	1343231244	JH51	1342242442	JH79	1342234323	JJ07	1343124232	JJ35	1342442112	JJ63	1343132343
JH24	1343123234	JH52	1343344232	JH80	1342123212	JJ08	1342321232	JJ36	1342112243	JJ64	1343133112
JH25	1342321334	JH53	1343231332	JH81	1342242332	JJ09	1343343224	JJ37	1342244213	JJ65	1342432112
JH26	1343243324	JH54	1343242132	JH82	1342443342	JJ10	1342234313	JJ38	1343113223	JJ66	1343313422
JH27	1343131242	JH55	1342343122	JH83	1342431133	JJ11	1342212443	JJ39	1343112333	JJ67	1342311233
JH28	1342322443	JH56	1343224324	JH84	1342424244	JJ12	1342332324	JJ40	1342131124	JJ68	1343112244
JH29	1342312434	JH57	1343344223	JH85	1342333424	JJ13	1342432343	JJ41	1342323423	JJ69	1343113234
JH30	1343113243	JH58	1343122433	JH86	1343133122	JJ14	1342112332	JJ42	1342321313	JJ70	1342232133
JH31	1343221333	JH59	1342113434	JH87	1343312123	JJ15	1343224213	JJ43	1342313112	JJ71	1343113212
JH32	1342311232	JH60	1342322133	JH88	1343324224	JJ16	1343112133	JJ44	1343113313	JJ72	1342422113
JH33	1343113244	JH61	1342323124	JH89	1343212234	JJ17	1342233132	JJ45	1342423112	JJ73	1342313123
JH34	1342232433	JH62	1342312133	JH90	1342331244	JJ18	1342343244	JJ46	1342231223	JJ74	1342324312
JH35	1343324344	JH63	1342443324	JH91	1342443132	JJ19	1342434213	JJ47	1342132113	JJ75	134224243-
JH36	1343212132	JH64	1343344243	JH92	1342422343	JJ20	1342342132	JJ48	1342244313	JJ76	1342243124
JH37	1342134334	JH65	1343131232	JH93	1343232234	JJ21	1342312443	JJ49	1343221133	JJ77	134311122
JH38	1343232124	JH66	1342113212	JH94	1343224333	JJ22	1342432012	JJ50	1343342443	JJ78	1342123442
JH39	1342243423	JH67	1342311324	JH95	1342423324	JJ23	1334434422	JJ51	1342424233	JJ79	1334434432



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JJ80	1342342332	JK09	1342431233	JK38	1342232432	JK67	1342344324	JK96	1342312113	JL25	1342212334
JJ81	1342343422	JK10	1342133132	JK39	1343342442	JK68	1342242424	JK97	1342323224	JL26	1343121334
JJ82	1342334223	JK11	1342243342	JK40	1342432134	JK69	1342112133	JK98	1343133124	JL27	1343124213
JJ83	1342433134	JK12	1342121233	JK41	1342312123	JK70	1343313444	JK99	1342422432	JL28	1342242323
JJ84	1343231122	JK13	1343122312	JK42	1342323444	JK71	1342312332	JL00	1342213344	JL29	1342311344
JJ85	1343234434	JK14	1343243132	JK43	1343223324	JK72	1343131313	JL01	1342213122	JL30	1343212242
JJ86	1343213223	JK15	1343322443	JK44	1342123342	JK73	1343133422	JL02	1342323122	JL31	1342443344
JJ87	1342234342	JK16	1343123344	JK45	1342323313	JK74	1343131323	JL03	1342433224	JL32	1342322132
JJ88	1342112444	JK17	1342212134	JK46	1342342322	JK75	1343123313	JL04	1342334342	JL33	1342312312
JJ89	1343213213	JK18	1343134344	JK47	1342321342	JK76	1342221124	JL05	1342122313	JL34	1343134222
JJ90	1342132342	JK19	1342112213	JK48	1342044322	JK77	1342234224	JL06	1342432234	JL35	1342131134
JJ91	1343311322	JK20	1342421334	JK49	1343131344	JK78	1342233244	JL07	1343212433	JL36	1342442233
JJ92	1342423442	JK21	1342334232	JK50	1342311334	JK79	1343123122	JL08	1343232313	JL37	1342234422
JJ93	1342131223	JK22	1342112142	JK51	1343112443	JK80	1342123434	JL09	1342334422	JL38	1342124212
JJ94	1342422324	JK23	1342212213	JK52	1342421224	JK81	1342344242	JL10	1342243134	JL39	1342312134
JJ95	1342123324	JK24	1343234323	JK53	1342421312	JK82	1342242243	JL11	1342344233	JL40	1343122324
JJ96	1342313213	JK25	1343343223	JK54	1342132324	JK83	1342232423	JL12	1343224343	JL41	1343124422
JJ97	1343232312	JK26	1342131224	JK55	1342334233	JK84	1343242123	JL13	1343244313	JL42	1342423312
JJ98	1343421213	JK27	1342312432	JK56	1342343112	JK85	1342131332	JL14	1343344224	JL43	1342322123
JJ99	1343122334	JK28	1343234222	JK57	1342133212	JK86	1343213112	JL15	1343324422	JL44	1342312424
JK00	1342213222	JK29	1343232434	JK58	1342212242	JK87	1342422124	JL16	1342112234	JL45	1342211344
JK01	1343212124	JK30	1342121123	JK59	1342423242	JK88	1343313442	JL17	1343211343	JL46	1343344242
JK02	1342121213	JK31	1343312234	JK60	1342232312	JK89	1343312323	JL18	1342322134	JL47	1342213213
JK03	1343112422	JK32	1343134323	JK61	1342233422	JK90	1342211343	JL19	1343123123	JL48	1343234313
JK04	1343132344	JK33	1342323344	JK62	1342443224	JK91	1342213212	JL20	1342322424	JL49	1334434234
JK05	1343422432	JK34	134223212	JK63	1343242313	JK92	1342112422	JL21	1343342212	JL50	1343422424
JK06	1342242312	JK35	1342121332	JK64	1342121342	JK93	134231322	JL22	1343133442	JL51	1343213242
JK07	1342122113	JK36	1342242242	JK65	1343423344	JK94	1343323242	JL23	1342231124	JL52	1343232443
JK08	1343113343	JK37	1342422424	JK66	1343211323	JK95	134234423	JL24	1342334244	JL53	1343123432



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JL54	1343242432	JL83	1342331133	JM12	1342312132	JM41	1342313242	JM70	1342434322	JM99	1342323234
JL55	1342212422	JL84	1342323113	JM13	1343323244	JM42	1343122124	JM71	1343213124	JN00	1343321324
JL56	1343421233	JL85	1342212132	JM14	1342312324	JM43	1343232423	JM72	1343134422	JN01	1343224233
JL57	1342322344	JL86	1342332123	JM15	1343322344	JM44	1343223133	JM73	1342442232	JN02	1343243442
JL58	1342322434	JL87	1343132422	JM16	1343123433	JM45	1343421224	JM74	1342423433	JN03	1342211323
JL59	1342332213	JL88	1342331222	JM17	1342231233	JM46	1342243312	JM75	1342432442	JN04	1342231224
JL60	1342321332	JL89	1342213343	JM18	1342231322	JM47	1342422123	JM76	134221123	JN05	134313244
JL61	1343132313	JL90	1343321133	JM19	1342121343	JM48	1342433243	JM77	1342334213	JN06	1342342242
JL62	1343113422	JL91	1343342312	JM20	1342424342	JM49	1343313243	JM78	1342244422	JN07	1342434224
JL63	1342331342	JL92	1343324324	JM21	1342121232	JM50	1343213432	JM79	1342332424	JN08	1342113343
JL64	1342123123	JL93	1342112323	JM22	1342431134	JM51	1342233242	JM80	134321123	JN09	1343113442
JL65	1342323442	JL94	1343231134	JM23	1343342323	JM52	1342343324	JM81	1342311244	JN10	1343342324
JL66	1342442423	JL95	1342321243	JM24	1342134324	JM53	1342433213	JM82	1342313322	JN11	1343311313
JL67	1343221123	JL96	1342134243	JM25	1342431324	JM54	1343423133	JM83	1342221242	JN12	1342431343
JL68	1334434213	JL97	1343134313	JM26	1342422133	JM55	1343232442	JM84	1343421243	JN13	1342243122
JL69	1343221132	JL98	1342443123	JM27	1342132234	JM56	1342231212	JM85	1342422342	JN14	1343234424
JL70	1342323324	JL99	1343123112	JM28	1343124322	JM57	1342442213	JM86	1342112132	JN15	1343132444
JL71	1343224223	JM00	1334434434	JM29	1342424434	JM58	1343244312	JM87	1342323134	JN16	1342313223
JL72	1343212133	JM01	1342344234	JM30	1342133224	JM59	1342442344	JM88	1343231323	JN17	1342232424
JL73	1342434424	JM02	1343212243	JM31	1342234242	JM60	1342112242	JM89	1342224443	JN18	1342342432
JL74	1343322432	JM03	1343123342	JM32	1334433213	JM61	1343231344	JM90	1342123243	JN19	1342243232
JL75	1342112334	JM04	1343242124	JM33	1342342113	JM62	1343232432	JM91	1342443432	JN20	1342321132
JL76	1342324434	JM05	1343324343	JM34	1342243242	JM63	1342433123	JM92	1342113123	JN21	1342213322
JL77	1342131323	JM06	1343243134	JM35	1343131212	JM64	1342212234	JM93	1342443133	JN22	1343243432
JL78	1343313213	JM07	1342431232	JM36	1342212324	JM65	1343423113	JM94	1343242422	JN23	1343343243
JL79	1342421343	JM08	1342112333	JM37	1343112132	JM66	1342233442	JM95	1343121323	JN24	1342312323
JL80	1343134232	JM09	1343311243	JM38	1342231244	JM67	1342132312	JM96	1342113213	JN25	1343211243
JL81	1342331233	JM10	1342112313	JM39	1343223423	JM68	1342221322	JM97	1342244342	JN26	1342343224
JL82	1343421333	JM11	1342113232	JM40	1342132423	JM69	1342212442	JM98	1342131213	JN27	1342434334



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JN28	1343121233	JN57	1334434324	JN86	1342312313	JP15	1343342123	JP44	1343342213	JP73	1342231332
JN29	1342134312	JN58	1342233434	JN87	134231134	JP16	1342442133	JP45	1342442113	JP74	1343422123
JN30	1342343342	JN59	1343112432	JN88	1342242123	JP17	1342213443	JP46	1342343442	JP75	1342213134
JN31	1342433422	JN60	1343242133	JN89	1342331134	JP18	1343112124	JP47	1343124423	JP76	1343321243
JN32	1343212334	JN61	1342433242	JN90	1343243223	JP19	1342323432	JP48	1343224424	JP77	1342122312
JN33	1343342242	JN62	1342131212	JN91	1343121343	JP20	1342424422	JP49	1342324223	JP78	1343123134
JN34	1342431223	JN63	1342113324	JN92	1342442322	JP21	1343422313	JP50	1342123242	JP79	1342442212
JN35	1343323122	JN64	1343322132	JN93	1342431224	JP22	1342244334	JP51	1342331343	JP80	1342113124
JN36	1342211232	JN65	1342244212	JN94	1343212324	JP23	1343423242	JP52	1342324343	JP81	1342442432
JN37	1342243434	JN66	1342433442	JN95	1342112312	JP24	1343343112	JP53	1342312322	JP82	1343343422
JN38	1343243434	JN67	1343242334	JN96	1343132133	JP25	134231222	JP54	1343113434	JP83	1343223123
JN39	1343321342	JN68	1342342344	JN97	1342334234	JP26	1343224244	JP55	1343232344	JP84	1342312242
JN40	1342321224	JN69	1342213433	JN98	1343131322	JP27	1343212442	JP56	1343234342	JP85	1343113132
JN41	1342213422	JN70	1342334224	JN99	1342242434	JP28	1342213442	JP57	1342113342	JP86	1343312132
JN42	1342313424	JN71	1342211324	JP00	1342323443	JP29	1342113234	JP58	1343232324	JP87	1342313443
JN43	1343213224	JN72	1342331232	JP01	1342424232	JP30	1343131213	JP59	1343312313	JP88	1342334313
JN44	1342132244	JN73	1342124224	JP02	1342332133	JP31	1342124233	JP60	1334433423	JP89	1343232424
JN45	1342343223	JN74	1342322312	JP03	1342124243	JP32	1343123243	JP61	1342232123	JP90	1342122423
JN46	1342243344	JN75	1342133444	JP04	1342443134	JP33	1342122432	JP62	1343213133	JP91	1342112433
JN47	1343212444	JN76	1343211344	JP05	1343132213	JP34	1342332134	JP63	1342212432	JP92	1343242442
JN48	1343324424	JN77	1342342122	JP06	1342344334	JP35	1342121243	JP64	1342121132	JP93	1342432423
JN49	1343423122	JN78	1342321124	JP07	1342321324	JP36	1342421244	JP65	1342212113	JP94	1342122124
JN50	1343242244	JN79	1342342323	JP08	1342332312	JP37	1343124334	JP66	1343243242	JP95	1342213312
JN51	1343124243	JN80	1342332244	JP09	1342443122	JP38	1343113344	JP67	1343224342	JP96	1342113323
JN52	1342233444	JN81	1342113222	JP10	1342232134	JP39	1342124423	JP68	1342342424	JP97	1343322433
JN53	1342131312	JN82	1342231133	JP11	1342324332	JP40	1342313234	JP69	1343244323	JP98	1343244213
JN54	1343312422	JN83	1343313224	JP12	1342424213	JP41	1342323112	JP70	1342334344	JP99	1343322313
JN55	1343232342	JN84	1343224212	JP13	1342431342	JP42	1342424223	JP71	1343122423		
JN56	1343323243	JN85	1343221343	JP14	1342433122	JP43	1342234324	JP72	1343213212		



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GENERAL SECURITY

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standard with an Arrow K7/K3 keyway. Other keyways are available such as Schlage C and E, both drilled for six pins. Original Arrow locksets with Schlage keyways are keyed with all pins to approximately a Schlage 3 depth. Rekey the cylinder before using.

Many of the functions of the "M" Series locksets can accommodate interchangeable core locks, compatible to that of the Best Lock interchangeable core system.

Standard factory original Arrow keys are now shipped with the bitting stamped from bow to tip. Older original factory cut keys were marked with the bitting from tip to bow.

Arrow uses a depth increment or drop of .014", making most pin kits a little inaccurate for pinning. Those locksmiths using a .003" kit should have good luck with the spaces, depths and pin lengths specified below. Arrow locks master key well.

Because the original increment is .014", two step progression should be used in developing a masterkey system using original factory depths. The Maximum Adjacent Cut Specification is 7, however, modification of this MACS may be required when the difference is 7 on both sides of a given cut. For example: the bitting 581834 yields very little, if any, flat for the tumbler to rest on at the 1 depth when used with two adjacent 8 depths.

Specifications

Depths and Spacing

Use HPC 1200 Card #2

Shoulder to Center of first cut: .265"

Cut to cut: .155"

MACS: 7

Root Depths

0	.312"
1	.298"
2	.284"
3	.270"
4	.256"
5	.242"
6	.228"
7	.214"
8	.200"
9	.186"

Pin Lengths

Top Pin: .155"

Bottom Pin Master Pin

0	.180"	NA
1	.195"	NA
2	.207"	.027"
3	.222"	.042"
4	.237"	.057"
5	.249"	.069"
6	.264"	.084"
7	.279"	.099"
8	.291"	.111"
9	.306"	.126"



Specifications

Depths and Spacing

Use HPC 1200 Card #2

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VANS

Continued from page 44

shackles. Its Xenoy thermoplastic cover and flow-through debris channel help it withstand the worst weather conditions.



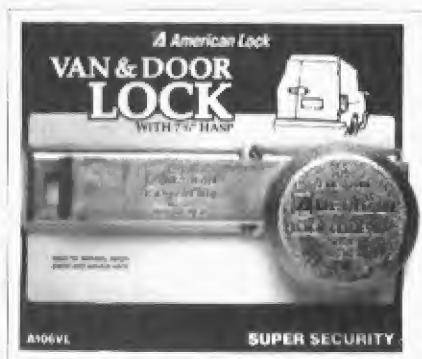
Contact your local distributor for more information about Master Lock Pro Series padlocks. Or write to Master Lock Company, P.O. Box 10367, Milwaukee, WI 53210.

Master Lock is an operating unit of MasterBrand Industries, which is a subsidiary of American Brands, Inc.

American Offers Fleet Protection

American Lock Company's Model 2000 LHC is a 2-7/8" round

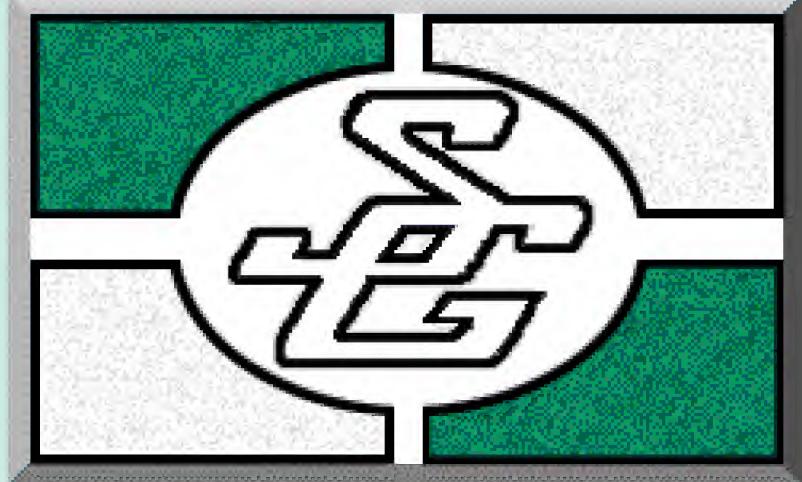
shackleless lock which is reinforced with nine hardened steel pins. The lock accepts the 6-pin tumbler extruded brass cylinder. It can be used on both rear and side doors of full-size and mini-vans as well as other vehicles. The lock fits on American's



hasps to eliminate lock rattling or marring of painted surfaces. Locks are available keyed alike, master or grand master keyed. For more information about American's fleet protection products, contact your local distributor or phone American at 708-534-2000.



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OPEN THE '91 THRU '94 NISSAN SENTRA

*By inverting the ends of the standard Z-tool,
opening vehicles with high and hidden lock linkage is now easier.*

by D. Scott Selby

Since the introduction of the Z-tool, I have received numerous requests from many of you in the lockout trenches to research, design and manufacture a Z-tool which reverses the Mini Box Hooks located at each end of the Z-tool.

By doing so those models designed with the lock linkage high in the door cavity or located below the door handle linkage (bottom linkage) can be grasped and hooked from below rather than from above. We call this new tool the Inverted Z-Tool®.

By making both the small end and the large end a little longer than the traditional Z-tool ends there is no need to produce another super short small end as Z-tool already has those

vertical situations covered. Having a large end and a small end allow for door thicknesses ranging from large luxury models to compact, to very thin subcompact door sizes. This way you can carry and learn how to use only one highly versatile tool rather than having to purchase and carry many tools to do the same jobs.

The following is a list of models that have been giving some technicians a difficult time. This is by no means an exhaustive list. The traditional Z-tool has always been assigned to open these models but now you can use the Inverted Z-tool:

Accura Vigor (open at rear door)
Audi 80, 90, 100, 200, Buick Skylark
Honda Accord, Civic, CRX, Infinity G-

20, M-30, Isuzu Impreza, Lincoln
Continental, Mazda Millenia,
Mitsubishi Diamante, Mirage, Verada
Nissan Altima, Sentra, 300ZX,
Oldsmobile Achieva, Plymouth Colt, 2
dr. only, Pontiac Grand Am, Subaru
SVX, Suzuki Swift, 4 dr. only

Opening The '91-'94, 2 & 4 Door Nissan Sentra

The following opening method illustrates only one of the many uses of the Inverted Z-Tool and does not apply to many of the models stated above as they have their own unique illustrated methods.

Start by inserting the thick end of flex-a-wedge between the window and weather-stripping at location shown in



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illustration two. Insert the large end of the Inverted Z-Tool at the right side of outside door handle. (See Illustration 1.)

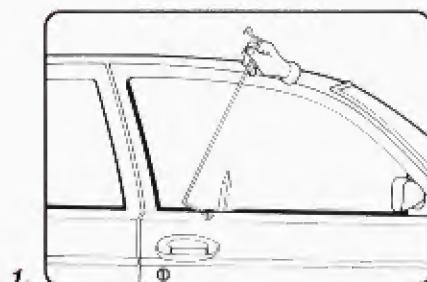
Push the tool down into the door cavity about 5" to 6". Make a 1/4 turn counter-clockwise (so handle faces away from window). The Mini-Box-Hook is now directly under the lock linkage which is located high within the door cavity. (See illustration 2.)

Pull up on the tool until contact is made with the well exposed horizontal lock linkage. (Watch for manual lock button to move slightly upon contact.) Make any slight adjustments needed for the Mini-Box-Hook to grasp the lock linkage from below. (See illustration 3.)

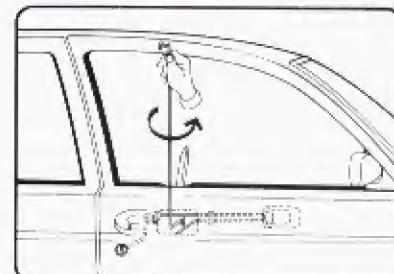
With your left hand, firmly pinch the shaft of the Inverted Z-tool as close to the weather-stripping as possible. In one motion, twist the handle clockwise (to bind hook onto linkage) as you leverage the linkage forward to its unlocked position. (See illustration 4.)

There are many new opening methods in the 1994 mid-year-update. This newest update represents the largest mid-year-update in the history of tracking auto lock systems. The Mid-Year-Update Program is free to current Z-tool System users and is mailed automatically for the intent to keep you, the professional lock out technician, on the cutting edge of this fast paced specialized automotive lock out industry now up to over eight hundred different models on the roads today.

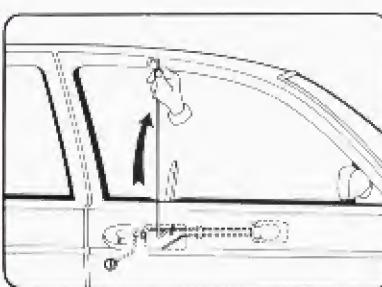
The author is the researcher and developer of the Master Z-tool System®.



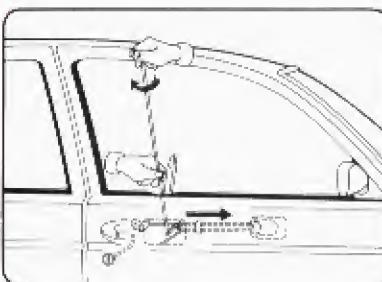
1.



2.



3.



4.



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TEST DRIVE



*Taking Industry
Products for a Spin
Around the Block*

FRAMON IC-234 KEY MACHINE

PRODUCT:

Framon IC-234 Interchangeable Core Key cutter. The IC-234 is available through Framon distributors for \$1995. (See photograph 1.)

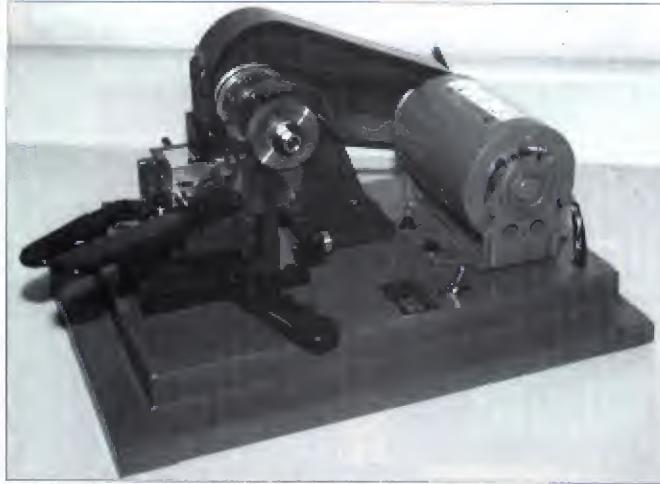
PRODUCT DESCRIPTION:

The IC-234 is a specialty code cutter designed for fast and accurate cutting of IC core keys. Spacing and depth cams for the A-2 system is standard. Depth cams for A-3 and A-4 systems can be purchased separately at \$50 each. The A-2 depth cam may be replaced with either the A-3 or A-4 at ordering.

FRIENDLINESS: One of the nicest features of this machine is its simplicity. Place the key in the vice, set the space and depth cams to the proper space and depth and pull the cutting handle. You're done!

FEATURES: The Framon IC-234 is capable of quickly and accurately cutting Arrow, Best, Falcon, InstaKey, Peaks, and any other IC core keys using the A2, A3 or A4 systems. Because spacing and depths are controlled by cams, depth and space specifications from key to key do not vary and leave little room for operator error. The lever design for moving the cams makes key generation easier and faster than duplicating or using dial operated code machines. (See photograph 2.)

The vice and tip stop are designed for fast and steady key engagement. To cut Best type keys, the vise top must display "B." For cutting the Kaba Peaks key, turn the vice top over to display "P."



1. The Framon IC-234 Code Cutter.



2. Lever and cam action makes this machine fast and accurate.

Changing the depth cam is simply a matter of removing the depth cam screw and placing the new cam in place. Because the carriage is spring loaded, there is considerable pressure against the depth cam. To make changing easier, remove this pressure by positioning the mounted cam on the deepest cut possible. Then take a pen, thick bolt or a wedge and place it between the carriage and its mounting bracket. Now turn the cam back towards its shallowest cut. The pen will keep the carriage away from the cam, allowing for an easier change.

DESCRIPTION:

Key cutter designed for Best style keys and key systems.

COMMENTS:

The IC-234 makes fast work of Best style key cutting.

TEST DRIVE RESULTS:

For locksmiths doing Best type A2, A3, or A4 systems, this machine is fast, clean, accurate and highly recommended.

It should also be noted that spacing goes from tip to bow, with the number one cut at the tip. This is not a mistake! This is the way the IC core manufacturers have designed their systems. Make sure that your bitting and masterkey systems take this into consideration.

COMMENTS AND SUGGESTIONS:

For anyone involved with IC core work, this machine is as fast and accurate as they come.

To make any changes may be knitticky. However, life for the locksmith can be made a little easier by adding the following:

- A handle or lever device for relieving pressure on the depth cam during changes.
- Making a quicker depth cam release design.
- And, the most important, with the accuracy and speed of this machine, adding new cams to accommodate other types of key systems including Schlage, Corbin Russwin, Sargent, etc. would make it more versatile and open to a new and much larger market.

CONCLUSION: For those doing IC core work, the Framon IC-234 is fast accurate and an ideal investment.

